XVI N-AERUS Conference

WHO WINS AND WHO LOSES?

Exploring and learning from transformations and actors in the cities of the South

Dortmund, 19-21 November 2015
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19th-21st November 2015 in Dortmund Germany
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19th-21st November 2015 in Dortmund Germany.

Introduction

With current developments around the world exhibiting increasing urban challenges, such as new urban forms and patterns of development, the expectations and responsibilities of politicians, policy-makers, urban researchers and the consultancy industry have arguably never been greater. The academic world appears inert while still struggling to disentangle disciplinary epistemologies and the attempt to overcome the exclusivity of established frameworks of knowledge production. Similarly, the policy-makers and politicians act within their own logic and schedules, and developers, donors, banks, NGOs and consultants have their internal agendas, scopes and working methods. Obviously, all these sectors produce significant knowledge on urban development; however their knowledge and action is often disconnected from each other and, even worse, it is often not transferable. The N-AERUS Conference will address these challenges by focusing on three issues:

Roundtable 1 provides the ground for discussion focussing on new spatial arrangements, Roundtable 2 calls for going beyond the common approach of best practices and puts an emphasis on actors whose voices are not yet recognised, Roundtable 3 addresses the three spheres of knowledge production in academia, consultancy/development agents and policy-makers.

1-Urbanization beyond megacities: new urban patterns – new constellations of actors

Discourses related to urban development tend to focus on major strands of discussion and lenses of analyses. However, beyond the dominating discussion on megacities, new forms of urbanisation are emerging: e.g. revitalisation of the inner-cities, development corridors, secondary cities, an urban-rural continuum, trans-locational and multi-locational households to name only a few. These new forms of urbanity come with a new set of actors beyond those institutionally and officially established. Not all of these new actors are involved in decision-making processes. While some actors will benefit from the emerging urban patterns, others will obviously lose, e.g. through displacement or even forced evictions and gentrification. This has to be addressed.

2-Learning from diverse experiences beyond “best-practice”

A predominant lens of how we understand and narrate urban development tends to focus on case studies, mainly “best practices”. The bases of these studies are analyses based on a single specific context with its individual connotations of conflicts and patterns of social spatial development. However, developing debates based on various experiences and understanding the complexity of comparison and the non-transferability of urban practices seem crucial in order to deepen the understanding of processes shaping urbanisation across the globe (Brenner 2012; Guarneros-Meza & Geddes 2011; Robinson 2011). This has become key in the understanding of specific contexts and plays an important role in the creation of knowledge in research and in the search for tangible solutions, as well as for monitoring and evaluation or improving living conditions.
3-The politics of knowledge in research and education

Consequently, assessing what forms of urban production are emerging, whose experiences are actually being expressed and in which ways knowledge is produced and disseminated has become a challenge in itself. To address these issues there is a need for more diversity in the major strands of knowledge production, including the plurality of research frameworks (de Sousa Santos, Arriscado Nunes, Meneses 2006; Roy 2009). There is also a need to consider various contemporary restructuring processes in the analyses of urban phenomena. It is inevitable to raise questions on how we understand, narrate and theorize urban practices in their relation to the urban change and actors involved.

Topics for the Roundtables in detail

Offering a platform to discuss such issues, the XVI\textsuperscript{th} N-AERUS conference will consist of three thematic roundtable sessions following individual paper presentations to question and reshape academic, institutional and community-based agendas for the identification of innovative research frameworks, practices and the pedagogy related with built environment disciplines. It will bring different sectoral actors together, including academics, practitioners and consultants.

The roundtables are centred around the above stated questions on going beyond major strands of discussion and lenses of analyses as the common approach of best practices and puts an emphasis on actors whose voices are not yet recognised by raising the following questions:

- What are the different spatial forms of urban development and their respective challenges and pitfalls?
- How do planners, officials, politicians, consultants and other actors affect changes in urban development and disseminate the results?
- How is knowledge produced and how does the engagement between universities, policy makers and urban communities work to achieve the best results in education, research and community services?

Submissions for individual papers related to the three roundtable themes are welcomed.

ROUNDTABLE 1 – Understanding new urbanities

Keynote speaker from Urban Planning and Geography

Beyond the heavily debated megacities that have been a recent focus of studies, other contemporary urban changes have received less attention. One is the importance of (certain) small- and medium-sized towns figuring as regional employment centres and migration destinations. Another one concerns trans-locality or trans-nationality and refers to social, economic and political processes transcending urban (or even national) borders, while heavily impacting on local development opportunities. These developments have incited discussions on rural-urban linkages, development corridors and functional regions, including calls for transcending territorialized urban polices and planning. In our view, all this is important, but needs to be carried further not only to operationalize academic discourses for urban policies and practice. We are thus interested in discussing
- methods, issues and critical views related to the concepts, narratives and discourses in the urbanisation processes beyond megacities,
- New shapes of urbanities beyond the mega- or primary cities, for example development corridors, urban regions, the today relatively higher growth in secondary cities in comparison to the primate city,
- urban–rural linkages and related trans-local or multi-locational livelihoods between different urban areas, the city and the countryside,
- new forms of actors involved in shaping the urban fabric.

**ROUNDTABLE 2 – Learning from diverse experiences beyond „Best Practices“**

**Keynote speaker (working in practices, practitioner)**

The second theme proposes to interrogate the dimensions of how we understand, narrate and theorize urban practices in their relation to urban change. Considerable attention paid to „best practices” is indicative of conceiving of development from a positivist perspective while it remains unclear whose experiences and goals are actually being expressed through „best practices”. We might question who determines the best practices and for whom are those „best practices”? Do the „best practices” enable us to examine who is losing and winning in these transformation processes?

- What ethical questions do we have to raise when relating to built environment and urban production – when shaping the city? How do we address the voice of the marginalised who are often represented by others, such as, for example, professional representatives and networks, and understand the conditions on the ground? This necessitates understanding who is participating in urban development and how and who is not. Therefore questions regarding actor constellations and their interests, forms of urban governance as well as the inclusionary or exclusionary spatial results of urban development will be raised in order to gain a deeper understanding of current urban practices.
- If we switch the focus from „best practices” to failures can we learn about conflicts and alternative developments? How do we facilitate exchange of different urban practices and learn from each other? We will raise the issue of how we compare development. What are in this context criteria and axes of comparison? How to incorporate citizen and users in the evaluations?

**ROUNDTABLE 3 – The politics of knowledge in research and education**

**Keynote speaker (working in both spheres research and education)**

Roundtable 3 aims to foster a critical reflection on how we obtain, create and teach knowledge (policies, social actors and planning processes), both in the academia and among so-called practitioners, e.g. in the consultancy world. In assessing this endeavour the reflection on how knowledge is produced and disseminated is a challenge in itself. Obtaining and creating knowledge often means moving within complex or competing political settings where keeping a neutral voice or being overwhelmed by complexity are very close to each other.

- Inevitably this also provokes questions in relation to urban theory and research practice and their relationship to learning and teaching about cities, even more so when raising the question of entering into foreign cultural ground. How do knowledge networks and knowledge
dissemination work? What kind of channels are used? Are these rather inclusive or exclusive? Do they include different disciplines or actors or do they remain in their own „body of knowledge” made up by a single professional domain? What methodological and epistemological issues evolve in addition to – and from experience and practices?

- We will also raise the educational issue of exchange. Why is exchange important? What is its added educational value? How do we facilitate cultural exchange as well as learning from each other and creating north-south, south-north and south-south dialogue? How do we reconcile individual professional (academic) aspirations with the needs of the interviewed and studied communities?

- In addition experiences from different countries suggest that there is a need for academia to actively take part in urban processes and associate with civil society. While different models exist from consultancy to advocacy the question is, how do we engage with diverse actors, what is the level of commitment? What pitfalls and challenges can emerge and what are common expectations on both sides?
XVI CONFERENCE N-AERUS:
QUI PERD ET QUI GAGNE ?

Explorer et apprendre des transformations et des acteurs dans les villes du Sud.

19th-21st November 2015 in Dortmund Germany

Introduction

Avec le développement actuel des villes autour du monde créant des défis urbains croissants, tel que les nouvelles formes urbaines et leurs modèles de développement, les attentes et les responsabilités des politiciens, des chercheurs urbains et des industries consultantes prennent une importance croissante. Le monde académique semble inerte alors qu'il se bat continuellement pour démêler les épistémologies disciplinaires et tenter de surmonter l'exclusivité des cadres établis de la production des connaissances. De la même manière que les actes des politiciens et décideurs sont déterminés au sein de leur propre logique et agenda, ceux des développeurs, des donateurs, des banques, des ONG et des consultants ont leurs propres échéances, envergures et méthodes de travail. Manifestement, tous ces secteurs produisent des connaissances signifiantes sur le développement urbain ; bien que leurs connaissances et leurs actions soient souvent déconnectées les unes des autres et, pire encore, qu'elles ne soient souvent pas applicables. La conférence N-AERUS va traiter ces défis en se focalisant sur trois enjeux :

La table ronde 1 initie une discussion se concentrant sur les nouveaux arrangements de l'espace, la table ronde 2 appelle à dépasser l'approche commune des meilleures pratiques et à promouvoir les acteurs dont les voix ne sont pas encore reconnues actuellement. La table ronde 3 met en relation les trois sphères de production de connaissance que sont les académies, les agents de consultations et de développement et les politiques.

1 – L'urbanisation derrière les mégavilles : nouvelles formes urbaines – nouvelles constellations d'acteurs

Les discours associés au développement urbain ont tendance à se focaliser sur les composantes de discussion et les outils d'analyse majeurs. Toutefois, derrière la discussion dominante des mégavilles, de nouvelles formes d'urbanisation sont en train d'émerger, telles que la revitalisation des centre-villes, le développement du réseau ferroviaire, les villes secondaires, un continuum urbain-rural, les habitations transférées ou à multiples locations, pour n'en nommer que quelques-unes. Ces nouvelles formes d'urbanités se développent par le biais d'un nouveau groupe d'acteurs parallèlement à ceux qui sont institutionnellement et officiellement établis. Tous ces nouveaux acteurs ne sont pas impliqués dans les processus de décisions. Alors que certains acteurs bénéficieront de ces formes urbaines émergentes, d'autres vont clairement y perdre, par exemple à travers des déplacements ou encore des évictions et gentrifications forcées. C'est à ça qu'il faut remédier.

2 – Apprendre des diverses expérience en dehors de 'la meilleure pratique'
L’angle prédominant de notre compréhension et notre discours sur le développement urbain a tendance à se focaliser sur des études de cas, principalement celles désignées comme les 'meilleures pratiques”. Les bases de ces études sont des analyses orientées sur un seul contexte spécifique avec ses connotations individuelles, des conflits et des formes du développement social et spatial. Néanmoins, développer des débats basés sur des expériences variées et comprendre la complexité de leur comparaison et l'incéssibilité des pratiques urbaines semble crucial en vue de renforcer la compréhension des processus de formation des urbanisations autour du monde (Brenner 2012; Guarneros-Meza & Geddes 2011; Robinson 2011). Ceci est devenu la clé dans la compréhension de contextes spécifiques et joue un rôle important dans la création de connaissances pour la recherche, pour l'élaboration de solutions tangibles, et également pour la surveillance et l'évaluation ou l'amélioration des conditions de vie.

3 – Les politiques des connaissances dans la recherche et l'éducation

Ensuite, par l'évaluation des formes émergentes de la production urbaine, ces expériences ont vocation à être partagées. Ainsi, la détermination des voies par lesquelles la connaissance est produite et dissipée est devenue un défi en soi-même. Pour résoudre ce problème, cela nécessite plus de diversité dans les outils majeurs de la production de connaissance, y compris par la pluralité des cadres de recherches (de Sousa Santos, Arriscado Nunes, Meneses 2006; Roy 2009). Il y a également un besoin de reconsidération des processus de restructuration diverses et contemporaines dans les analyses des phénomènes urbains. Il est inévitable de relancer ces questions basées sur la façon dont nous comprenons, racontons et théorisons les pratiques urbaines dans leur relation aux changements urbains et aux acteurs impliqués.

Détails des thèmes abordés aux tables rondes

En offrant une plate-forme pour discuter de tels problèmes, la XVIème conférence N-AERUS consistera en trois sessions de tables-rondes thématiques, chacune suivant une présentation d'articles individuels visant à mettre en question et introduire les programmes académique, institutionnel et communautaire de l'identification des cadres, des pratiques et des recherches innovantes liées avec les disciplines du milieu bâti. Cela va rassembler différents acteurs sectoriels, notamment les académiciens, les praticiens et les consultants.

Les tables-rondes sont centralisées autour des questions principales en cours concernant les états, avec l'aide des outils majeurs de discussion et des objectifs d'analyse tel que l'approche commune de la meilleure pratique et mettent l'accent sur les acteurs dont les voix ne sont pas encore reconnues en soulignant les questions suivantes :

- Quelles sont les différentes formes spatiales du développement urbain, leurs défis et leurs dangers respectifs ?
- Comment les planificateurs, les officiels, les politiciens, les consultants et les autres acteurs agissent sur les changements du développement urbain et en diffusent les résultats ?
- Comment est produite la connaissance et comment fonctionne l'engagement entre les universités, les politiciens et les communautés urbaines pour atteindre les meilleurs résultats
La soumission préalable des articles individuels liés aux trois tables-rondes est la bienvenue.

TABLE RONDE 1 – Comprendre les nouvelles urbanités  
conférencier principal urbaniste et géographe

Les très grandement critiquées méga-villes ont été l'objet de nombreuses études récentes, et d'autres formes de changements urbains contemporains reçoivent moins d'attention. L'une d'elle est la prise d'importance de certaines villes de taille faible et moyenne, se développant comme centre régional de l'emploi et destination privilégiée à la migration. Une autre concerne la multiple-localité et multiple-nationalité et fait référence au processus social, économique et politiques de dépassement des frontières d'une ville (ou même d'un pays), tandis qu'elle impacte lourdement sur les opportunités de développements locaux. Ces développement ont conduit à des discussions sur la relation rural-urbain, le développement des axes et les régions fonctionnelles, y compris les demandes pour des planifications urbaines territorialisées transcendantes. D'après nous, tout ces points ont leur importance, mais doivent être approfondis et pas seulement pour souligner les discours académiques des pratiques urbaines. Nous sommes dorénavant intéressés par la remise en cause

- Des méthodes, problèmes et regards critiques liés aux concepts narratifs et discours dans les processus d'urbanisation derrière les méga-villes
- Des nouvelles morphologies des urbanités derrière les méga-villes ou les villes primaires, par exemple par le développement des axes, de régions urbaines, l'actuelle expansion, relativement plus élevée dans les villes secondaires que dans les villes primaires
- Des relations urbain-rural et moyens d'existence liés au trans-local et multilocations entre les différentes aires urbaines, la ville et la campagne
- Des nouvelles formes d'acteurs impliqués dans la formation du tissu urbain.

TABLE RONDE 2 – Apprendre des diverses expérience au-delà des 'Meilleures Pratiques'  
conférencier principal (travailler dans la pratique, praticien)

Le second thème propose d’interroger la manière dont nous comprenons, racontons et théorisons les pratiques urbaines dans la relation aux mutations urbaines. L'attention particulière portée aux "meilleures pratiques" indique une conception du développement à partir d'une perspective positiviste alors que cela demeure peu clair. Ces expériences et leurs buts sont en réalité rassemblées sous la qualification "meilleures pratiques". Nous serons amenés à questionner qui détermine les "meilleures pratiques" et à qui sont destinées ces "meilleures pratiques" ? Est-ce que les "meilleures pratiques" nous permettent d'examiner qui perd et gagne dans ces processus de transformations ?

- Quelles questions éthiques devront nous soulever en lien avec le milieu bâti et la production urbaine – quand façonner la ville ? Comment mettre en lumière la voix des marginalisés qui sont souvent représentés par d'autres, tels que, par exemple, des représentants et réseaux professionnels, et comment comprendre l'état du terrain ? Cela nécessite une compréhension des acteurs du développement urbain et de ceux qui n'y
participent pas. Par conséquent, des questions regardant les constellations d'acteurs et leurs intérêts, les formes de gouvernance urbaine également, telles que les résultats spatiaux des processus d'inclusion et d'exclusion des développements urbains vont être soulevées dans le but de dégager une compréhension plus profonde des pratiques urbaines actuelles.

- Si nous déplaçons notre attention des “meilleures pratiques” vers les échecs, pouvons-nous apprendre des conflits et des développements alternatifs ? Comment pouvons-nous faciliter l'échange des différentes pratiques urbaines et apprendre les uns des autres ? Nous allons aborder également le problème de comment comparer le développement Quels sont, dans ce contexte, les critères et les axes de comparaison ? Comment incorporer les citoyens et les usagers dans ces évaluations ?

**TABLE RONDE 3 – Les politiques des connaissances dans la recherche et l'éducation**

**Conférencier principal (travaillant dans les deux sphères de la recherche et de l'éducation)**

La table ronde 3 vise la promotion d'une réflexion critique sur notre façon d'obtenir, de créer et d'enseigner les connaissances (politiques, acteurs sociaux et processus de planification), et à la fois dans le monde académique comme parmi ceux que l'on nomme les praticiens, par exemple dans le domaine des consultants. En évaluant cet effort, cette réflexion sur la manière dont sont produites et distribuées nos connaissances constitue un défi en elle-même. Obtenir et créer la connaissance signifie souvent se déplacer à l'intérieur de cadres complexes ou de politiques opposées, dans lesquels garder une voix neutre et se laisser submerger par la complexité sont très proche l'un de l'autre.

- Inévitablement cela provoque des questionnements en relation avec les sciences et les recherches pratiques urbaines, ainsi que leurs relations à l'apprentissage et l'enseignement sur les villes, et davantage encore quand se développe la question d'entrer dans un sol de culture étrangère. Comment le réseau de connaissance et la distribution des connaissances fonctionne-t-il ? Quels types de chaînes sont utilisées ? Sont-elles plutôt inclusives ou exclusives ? Est-ce qu'elles incluent différentes disciplines et acteurs ou est ce qu'elles restent dans leur propre 'corps de connaissances' constitué par un seul domaine professionnel ? Quelles problèmes méthodologiques et épistémologiques se développent en plus de et à partir de l'expérience et des pratiques ?

- Nous allons également soulever les problèmes éducationnels de l'échange. Pourquoi l'échange est-il important ? Quel est sa valeur éducationnelle ajoutée ? Comment pouvons-nous faciliter l'échange culturel tout comme apprendre des uns et des autres et créer des dialogues nord-sud, sud-nord et sud-sud ? Comment pouvons-nous réconcilier des inspirations professionnelles individuelles (universitaires) avec les besoins des interviewés et des communautés étudiées ?

- De plus, les expériences menées dans différents pays suggèrent qu'il y a un réel besoin pour les universitaires de prendre part activement dans les processus urbain et de s'associer avec la société civile. Tandis qu'il existe différents modèles, depuis la consultation jusqu'à la promotion, la véritable question est, comment pouvons-nous engager les différents acteurs, quel est le niveau d'engagement ? Quels pièges et défis peuvent émerger et quels sont les attentes communes des deux côtés ?
**XVI CONFERENCIA N-AERUS:**

**“QUIENES GANAN Y QUIENES PIERDEN?”**

Explorando y aprendiendo de las transformaciones urbanas y las prácticas de los actores en las ciudades del Sur

19th-21st November 2015 in Dortmund Germany

*Introducción*

Mientras que el actual desarrollo urbano en todo el mundo, a través de nuevas formas de urbanización y patrones de crecimiento urbano, presenta cada vez mayores desafíos, podría afirmarse que las expectativas y las responsabilidades de los políticos, autoridades, legisladores, investigadores urbanos y consultores, son mayores que nunca. Ante este escenario, pareciera que el mundo académico se muestra pasivo, luchando por dilucidar entre diversas epistemologías disciplinares e intentando superar la rigidez de los marcos de teóricos establecidos. Del mismo modo, los decisores y los políticos actúan desde su propia lógica y en el marco de sus propias agendas; mientras que los desarrolladores, los financieros, los bancos, las ONGs y los consultores tienen sus propios programas. Obviamente, todos estos sectores producen un significativo conocimiento sobre el desarrollo urbano; sin embargo, sus saberes y sus acciones frecuentemente se encuentran desconectados entre sí y, peor aún, a menudo no resultan transferibles.

En la Conferencia N-AERUS, abordaremos estos desafíos, centrándonos en tres temas principales, a través de la organización de tres mesas redondas:

La **Mesa Redonda 1** propone las bases para una discusión enfocada en las nuevas configuraciones espaciales. La **Mesa Redonda 2** propone ir más allá de los abordajes de las mejores prácticas, y pone énfasis en los actores cuyas voces aún no son reconocidas. La **Mesa Redonda 3** se enfoca en tres ámbitos de producción de conocimiento: el ámbito académico, los consultores y agentes de desarrollo y los responsables políticos.

1 – **La urbanización más allá de las megaciudades: nuevos modelos urbanos - nuevas constelaciones de actores**

Habitualmente, los discursos relacionados con el desarrollo urbano tienden a enfocarse en los principales tópicos de discusión reconocidos. Sin embargo, más allá de la discusión dominante acerca de las megaciudades, emergen nuevas formas de urbanización, por ejemplo: la revitalización de zonas urbanas degradadas, los corredores de desarrollo, las ciudades intermedias o secundarias, la continuidad urbano-rural, la trans-localización y los hogares translocales, sólo por mencionar algunos. Estas nuevas formas de urbanización, vienen acompañadas por nuevos conjuntos de actores, más allá de aquellos institucionalizados o establecidos. No todos esos nuevos actores se encuentran involucrados en los procesos de toma decisiones. Mientras algunos de ellos pueden resultar beneficiados por los procesos urbanos emergentes, otros obviamente resultan perjudicados, por ejemplo a partir de desplazamientos, desalojos forzosos o procesos de gentrificación. Consideramos que estas son cuestiones que deben ser abordadas.

2 – **Aprendiendo de diversas experiencias, más allá de las “mejores prácticas”**
Un enfoque predominante de la manera en que entendemos y narramos el desarrollo urbano tiende a centrarse en estudios de casos, y principalmente en las “mejores prácticas”. Muchas veces, las bases de estos estudios son análisis fundados en un único contexto específico con sus particulares connotaciones de conflictos y patrones característicos de desarrollo socio-espaciales. Sin embargo, el desarrollo de los debates basados en experiencias diversas comprendiendo la complejidad de la comparación y la no transferibilidad de las prácticas urbanas, resulta crucial para profundizar la comprensión de los procesos de urbanización a lo largo del mundo (Brenner 2012; Guarneros-Meza y Geddes 2011; Robinson 2011). Esto se ha transformado en una cuestión clave para la comprensión de contextos específicos, y juega un rol fundamental tanto en la creación de conocimiento en investigación y en la búsqueda de soluciones concretas, como para monitoreos y evaluaciones para mejorar las condiciones de vida.

3 – Políticas de conocimiento en la investigación y la formación

Consecuentemente, en la evaluación de las nuevas formas de producción urbana emergentes, cuyas experiencias se están manifestando, y en las cuales se está produciendo y diseminando conocimiento, se han vuelto un desafío en sí mismas. Para abordar estas cuestiones se necesita una mayor diversidad en los sistemas de producción de conocimiento, incluyendo la pluralidad de marcos teóricos de referencia para la investigación (de Sousa Santos, Arriscado Nunes, Meneses 2006; Roy 2009). También existe la necesidad de considerar los actuales procesos de reestructuración en el análisis de los fenómenos urbanos. Es inevitable plantear algunos interrogantes acerca de cómo entendemos, narramos y teorizamos las prácticas urbanas en su relación con los cambios urbanos y los actores involucrados.

Detalle de los temas de las Mesas Redondas

Ofreciendo una plataforma para la discusión de estas cuestiones, la 16ª Conferencia N-aerus consistirá en tres mesas redondas temáticas con presentaciones de ponencias individuales, para interrogar y proponer cambios en las agendas académicas, institucionales y de la comunidad, así como para identificar marcos teóricos de investigación innovadores, prácticas y pedagogías relacionadas con las disciplinas del hábitat. Reuniendo a diferentes sectores, como los académicos, los especialistas o profesionales no académicos (practitioners) y los consultores.

Las mesas redondas están organizadas en torno a los interrogantes anteriormente señalados, yendo más allá de las principales corrientes de discusión y enfoques de análisis, como el habitual abordaje de las mejores prácticas, poniendo énfasis en los actores cuyas voces no son aún reconocidas, y proponiendo las siguientes preguntas:

- ¿Cuáles son las diferentes formas espaciales del desarrollo urbano y sus respectivos desafíos y obstáculos?
- ¿Cómo los planificadores, funcionarios, políticos, consultores y demás actores influyen en los cambios en el desarrollo urbano y difunden los sus resultados?
Introducción

¿De qué manera se produce el conocimiento y cómo es el compromiso entre las universidades, los deciresores políticos y las comunidades urbanas, trabajando para lograr los mejores resultados en enseñanza, investigación y servicios comunitarios?

Presentaciones de ponencias individuales relativas a las temáticas de las tres mesas redondas.

MESA REDONDA 1 – Comprender las nuevas urbanizaciones

Orador principal de Planificación Urbana y Geografía

Más allá del debate sobre las megaciudades, que han sido el foco de recientes discusiones, otros cambios urbanos contemporáneos han recibido menor atención. Uno de ellos es la relevancia de las ciudades intermedias que se presentan como centros de empleo a nivel regional y atractores de población migrante. Otro aspecto es la translocalización o transnacionalización referidas a procesos sociales, económicos y políticos que trascienden los límites urbanos (e incluso las fronteras nacionales), a la vez que impactan fuertemente en las oportunidades de desarrollo local.

Estos acontecimientos han promovido discusiones sobre las vinculaciones rural-urbano, corredores de desarrollo y regiones funcionales, incluyendo demandas para trascender las políticas y planes territorializados. Desde nuestro punto de vista, todo esto es importante, pero se necesita ir más allá de la operacionalización de los discursos académicos para las políticas urbanas y las prácticas. Estamos entonces interesados en discutir:

- métodos, problemas y visiones críticas relativos a conceptos, narraciones y discursos sobre los procesos de urbanización emergentes, más allá de las megaciudades.
- Nuevas formas de urbanización, además de las megaciudades (o ciudades primarias), por ejemplo los corredores de desarrollo, las regiones urbanas, el relativamente mayor crecimiento de las ciudades secundarias en comparación con la ciudad primaria.
- Las vinculaciones rural-urbano y los medios de vida translocales o multilocales entre diversas áreas urbanas, o entre la ciudad y el campo.
- Nuevos actores involucrados en la conformación del tejido urbano.

MESA REDONDA 2 – Aprendiendo de las diversas experiencias, más allá de las “Mejores Prácticas”

Orador principal: especialista (practicante) o profesional no académico

El segundo tema propone interrogar las dimensiones de la forma en que entendemos, narramos y teorizamos las prácticas urbanas en su relación con los cambios urbanos. La considerable atención prestada a las “Mejores Prácticas” resulta indicativa de una concepción del desarrollo desde una perspectiva positivista, mientras aún no está claro qué experiencias y logros están realmente siendo expresados como “Mejores Prácticas”. Podríamos cuestionar ¿quién determina cuáles son las mejores prácticas y para quién son estas las “mejores prácticas”? Estas mejores prácticas, ¿nos permiten examinar quiénes ganan y quiénes pierden en estos procesos de transformación urbana?

- Qué cuestiones éticas deberíamos plantear en relación con el entorno construido y la producción urbana al momento de configurar la ciudad? Cómo consideramos la voz de los
marginados que a menudo son representados por otros, como representantes profesionales y redes, y cómo entendemos las condiciones en el terreno? Para ello se requiere una comprensión acerca de quiénes y de qué manera están participando en el desarrollo urbano y quiénes no. Por lo tanto, serán planteadas preguntas relativas a las constelaciones de actores y sus intereses, a las formas de gobernanza urbana, así como los resultados espaciales inclusivos o excluyentes del desarrollo urbano, para lograr una más profunda comprensión de las actuales prácticas.

- Si cambiamos el enfoque desde las “mejores prácticas” a los fracasos, ¿podemos aprender acerca de los conflictos y los desarrollos alternativos? ¿Cómo podemos facilitar el intercambio de diversas prácticas urbanas y aprender unos de otros? Proponemos plantear la cuestión de cómo comparamos el desarrollo. ¿Cuáles son los criterios y ejes de comparación? ¿Cómo incorporar a los ciudadanos y usuarios en los procesos de evaluación?

**MESA REDONDA 3 – Las políticas de conocimiento en la investigación y la formación**

Orador principal: alguien relacionado con la investigación y la enseñanza

La Mesa Redonda 3 apunta a fomentar la reflexión sobre nuestros logros, creando y enseñando conocimiento (políticas, actores sociales y procesos de planificación), tanto en la academia como en los denominados “practitioners” (especialistas no académicos), como por ejemplo el campo de las consultorías. En la consideración de esta cuestión, la reflexión acerca de cómo se produce el conocimiento y la manera en que se difunde, constituye un desafío en sí mismo. Obtener y crear conocimiento habitualmente significa moverse en ámbitos políticos complejos y competitivos, en donde mantener una voz neutral o resultar superado por la complejidad, está muy cerca.

- Inevitablemente, esto también provoca preguntas en relación con la teoría urbana y la práctica de la investigación y su relación con el aprendizaje y la enseñanza sobre las ciudades, más aún cuando se plantea la cuestión del acercamiento a culturas extranjeras. ¿Cómo establecer redes de creación y de difusión de conocimiento? ¿Qué tipo de canales se utilizan? ¿Son estos inclusivos o excluyentes? Incluyen diferentes disciplinas y/o actores, o se mantienen en sus propios *corpus disciplinares* estructurados entorno a un único dominio profesional? ¿Qué cuestiones metodológicas y epistemológicas están involucradas además de las experiencias y las prácticas?

- También plantearemos la cuestión de intercambio de enseñanza-aprendizaje. ¿Por qué es importante el intercambio? ¿Cuál es su valor agregado? ¿Cómo facilitamos los intercambios culturales tanto en el aprendizaje, la creación y el diálogo entre unos y otros, entre Norte-Sur, Sur-Norte y Sur-Sur? ¿Cómo reconciliamos las aspiraciones individuales de los profesionales académicos con las necesidades de las comunidades estudiadas y entrevistadas por ellos?

- Además, las experiencias de diversos países sugieren que hay una necesidad de la academia por participar activamente en los procesos urbanos y asociarse con la sociedad civil. Mientras existen diferentes modelos de consultorías, la pregunta es, ¿cómo nos relacionamos con los diversos actores, con qué nivel de compromiso? ¿Qué obstáculos y desafíos pueden surgir y cuáles son las expectativas comunes en ambos lados
XVI N-AERUS CONFERENCE: WHO WINS AND WHO LOSES?
Exploring and learning from transformations and actors in the cities of the South.
19th-21st November 2015 in Dortmund Germany, Campus Süd, GBlIII, R.103

Guiding questions:
The N-AERUS conference addresses the following topic:

- What are the different spatial forms of urban development and their respective challenges and pitfalls?
- How do planners, officials, politicians, consultants and other actors affect changes in urban development and disseminate the results?
- How is knowledge produced and how does the engagement between universities, policy makers and urban communities work to achieve the best results in education, research and community services?

The conference is structured by roundtables to support a lively discussion. Roundtable 1 provides the ground for discussion focussing on new spatial arrangements, Roundtable 2 calls for going beyond the common approach of best practices and puts an emphasis on actors whose voices are not yet recognised, Roundtable 3 addresses the three spheres of knowledge production in academia, consultancy/development agents and policy-makers.

Thursday, November 19, 2015
11:00 Registration
13:00 Welcome addresses
N-AERUS committee; Prof. Luisa Moreno, URV, Eiburg
Faculty of Spatial Planning, Deans office, TU Dortmund; Prof. Joachim Scherer
Representative of City of Dortmund; Susanne Wobbling
Local organisers: Habitat Unit, TU Berlin; Dr. Pavel Alfaro d’Aleocant, TU Dortmund; Dr. Wolfgang Scholz.

ROUNDTABLE 1: Urbanization beyond megacities: new urban patterns – new constellations of actors
Chair: Dr. Wolfgang Scholz, TU Dortmund
13:30 Keynote speakers
Prof. Dr. Wilnd J. Kome, Ardi University, Tanzania
Prof. Dr. Leschey Jan, University of the Free State, South Africa
14:30 Individual presentations
16:00 Coffee break
16:15 Round table discussion
16:45 Plenary discussion
17:30 End of the first conference day
19:00 Get together

Friday, November 20, 2015
9:00 Introduction

ROUNDTABLE 2 - Learning from diverse experiences beyond ‘Best Practices’
Chair: Dr. Javier Martinez, University Delft, N-AERUS
9:15 Keynote speakers
Prof. Dr. Astrid Ley, University of Stuttgart, Germany
Prof. Dr. Alan Gilbert, UCL, UK
10:15 Individual presentations
11:45 Coffee break
12:00 Round table discussion
12:30 Plenary discussion
13:15 Lunch break

ROUNDTABLE 3 - The politics of knowledge in research and education
Chair: Dr. Paula Alfaro d’Aleocant TU Berlin
14:00 Keynote speakers
Prof. Dr. Margarita Greente, PUC, Chile
Prof. Dr. Harry Smith, Heriot Watt University, UK and Dr. Emilio Michelini, Università di Udine, Italy
15:00 Individual presentations
16:30 Coffee break
16:45 Round table discussion
17:15 Plenary discussion
18:00 Identification of topics for open space
18:30 End of the second conference day
19:30 Dinner (optional)

Saturday, November 21, 2015
8:00 Cities Alliance Working Group 1

8:00 ROUNDTABLE 4 - Open space session
Chair: Dr. Genet Alem, TU Dortmund
Coffee break included
10:30 Concluding remarks
11:00 N-AERUS Annual Meeting
12:30 Guided site visit "Phoenix Lake" and parallel meetings of N-AERUS – Cities Alliance Working Group 2 and 3
15:00 End of the conference

Registration via www.naerus.net

Supported by DFG Deutsche Forschungsgemeinschaft
PROGRAMME 16TH N-AERUS CONFERENCE

Thursday, November 19, 2015

11:00  Registration

13:00  Welcome addresses
N-AERUS committee: Prof. Luisa Moretto, ULB, Belgium;
Faculty of Spatial Planning, Deans office, TU Dortmund University: Prof. Joachim Scheiner;
City of Dortmund: Mrs Susanne Webeling;
Local organisers: Habitat Unit, TU Berlin: Dr. Paola Alfaro d'Alençon, Germany;
International Planning Studies, Faculty of Spatial Planning, TU Dortmund University: Dr. Wolfgang Scholz

ROUNDTABLE 1: Urbanization beyond megacities: new urban patterns – new constellations of actors
Chair: Dr. Wolfgang Scholz, TU Dortmund

13:30  Keynote speakers
Prof. Dr. Wilbard J. Kombe, Ardhi University, Tanzania:
Rapid Urbanization under Poverty: Coping with new Mosaics in African Cities
Prof. Dr. Lochner Marais, University of the Free State, South Africa:
The role of secondary cities in managing urbanization in South Africa

14:30  Individual presentations

16:00  Coffee break

16:15  Round table discussion

16:45  Plenary discussion

17:30  End of the first conference day

19:00  Get together

Friday, November 20, 2015

9:00  Introduction

ROUNDTABLE 2 – Learning from diverse experiences beyond „Best Practices”
Chair: Dr. Javier Martinez, University of Twente, ITC, N-AERUS

9:15  Keynote speakers
Prof. Dr. Astrid Ley, University of Stuttgart, Germany: Learning from messy experience
Prof. Dr. Alan Gilbert, University College London, UK:
Cross-National Policy Transfer In Regional And Urban Policy: Learning From The South

10:15  Individual presentations

11:45  Coffee break
12:00  Round table discussion

12:30  Plenary discussion

13:15  Lunch break

**ROUNDTABLE 3 – The politics of knowledge in research and education**
Chair: Dr. Paola Alfar d'Alençon, Habitat Unit, TU Berlin

14:00  **Keynote speakers**
Prof. Dr. Margarita Greene, Pontificia Universidad Católica de Chile, School of Architecture, Chile

*The Expanded Field in the Built Environment Discipline: explorations and future scenarios for the formation of the future professionals*

Prof. Dr. Harry Smith, Heriot Watt University, GB; Dr. Enrico Michelutti, Università di Udine:

*Redefining the City of the South in the context of the crisis: the experience of N-AERUS 2008-15*

15:00  Individual presentations

16:30  Coffee break

16:45  Round table discussion

17:15  Plenary discussion

18:00  Identification of topics for open space

18:30  End of the second conference day

19:30  Dinner (optional)

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**Saturday, November 21, 2015**

8.00  Cities Alliance Working Group 1

**9.00 ROUNDTABLE 4 – Open space session**
Chair: Dr. Genet Alem, TU Dortmund
Coffee break included

10:30  Concluding remarks

11:00  N-Aerus Annual Meeting

12:30  Guided site visit “Phönix Lake” and parallel meetings of N-Aerus –Cities Alliance Working Group 2 and 3

15:00  End of the conference
ROUNDTABLE 1:

Urbanization beyond megacities: new urban patterns – new constellations of actors
KEYNOTE SPEECH: PROF. DR. LOCHNER MARAIS, UNIVERSITY OF THE FREE STATE, SOUTH AFRICA
The Role of Secondary Cities in Managing Urbanization in South Africa
INTRODUCTION

- Bringing together three issues
- The role of secondary cities in managing urbanisation commonly mentioned in the literature
- Marikana Aug 2012
- The revitalization of distressed mining areas

MAIN ARGUMENT

- Secondary cities are doing well in managing urbanisation – much similar to metropolitan areas
- Yet, because of the direct link with commodities – there are long term risks (this is also the case in large parts of Africa)

- A few notes
  - Term secondary cities (15-20% of population)
  - System of cities
  - No official definition or set number of cities in SA
  - We use a definition of National Treasury in SA
  - Use of indicators (Turok and others…)
TABLE 1: POPULATION GROWTH IN SECONDARY CITIES, METROPOLITAN AREAS AND SOUTH AFRICA, 2001 AND 2011

<table>
<thead>
<tr>
<th>Secondary cities/area</th>
<th>2001</th>
<th>2011</th>
<th>Absolute growth</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary cities</td>
<td>5 919 613</td>
<td>7 263 756</td>
<td>1 344 143</td>
<td>23</td>
</tr>
<tr>
<td>Metros</td>
<td>16 188 578</td>
<td>20 371 918</td>
<td>4 183 340</td>
<td>26</td>
</tr>
<tr>
<td>South Africa – excluding the metros</td>
<td>26 631 000</td>
<td>31 399 000</td>
<td>2 767 000</td>
<td>10</td>
</tr>
<tr>
<td>Total South Africa</td>
<td>44 819 778</td>
<td>51 770 560</td>
<td>6 950 782</td>
<td>16</td>
</tr>
<tr>
<td>Some secondary city examples</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rustenburg (M)</td>
<td>387 096</td>
<td>549 575</td>
<td>162 479</td>
<td>42</td>
</tr>
<tr>
<td>Emalahleni (M)</td>
<td>276 413</td>
<td>395 466</td>
<td>119 053</td>
<td>43</td>
</tr>
<tr>
<td>Madibeng (M)</td>
<td>347 578</td>
<td>477 381</td>
<td>129 803</td>
<td>37</td>
</tr>
<tr>
<td>Matjhabeng (M)</td>
<td>408 170</td>
<td>406 461</td>
<td>-1 709</td>
<td>-0.1</td>
</tr>
</tbody>
</table>
TABLE 2: EMPLOYMENT GROWTH IN SECONDARY CITIES IN SOUTH AFRICA

<table>
<thead>
<tr>
<th>Category</th>
<th>2001</th>
<th>2011</th>
<th>Absolute growth</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary cities</td>
<td>1 498 446</td>
<td>2 124 046</td>
<td>625 600</td>
<td>42</td>
</tr>
<tr>
<td>Metros</td>
<td>4 801 189</td>
<td>6 876 552</td>
<td>2 075 363</td>
<td>43</td>
</tr>
<tr>
<td>South Africa – excluding the metros</td>
<td>4 782 571</td>
<td>6 303 525</td>
<td>1 520 954</td>
<td>32</td>
</tr>
<tr>
<td>Total South Africa</td>
<td>9 583 760</td>
<td>13 180 077</td>
<td>3 596 317</td>
<td>38</td>
</tr>
</tbody>
</table>

FIGURE 1: POPULATION VERSUS EMPLOYMENT GROWTH IN SECONDARY CITIES IN SOUTH AFRICA
TABLE 3: AVERAGE HOUSEHOLD INCOMES, 2001 AND 2011

<table>
<thead>
<tr>
<th>Category</th>
<th>2001</th>
<th>2011</th>
<th>Absolute growth</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary cities</td>
<td>43 881</td>
<td>97 337</td>
<td>53 456</td>
<td>122</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>72 886</td>
<td>144 049</td>
<td>71 163</td>
<td>98</td>
</tr>
<tr>
<td>South Africa – excluding the metros</td>
<td>30 099</td>
<td>68 434</td>
<td>38 355</td>
<td>127</td>
</tr>
<tr>
<td>South African average</td>
<td>47 269</td>
<td>100 506</td>
<td>53 237</td>
<td>113</td>
</tr>
</tbody>
</table>

TABLE 4: HOUSEHOLDS WITH INDOOR WATER ACCESS IN METROPOLITAN AND SECONDARY CITIES, 2001 AND 2011

<table>
<thead>
<tr>
<th>Category</th>
<th>2001 (n)</th>
<th>2001 (%)</th>
<th>2011 (n)</th>
<th>2011 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary cities</td>
<td>508 866</td>
<td>33</td>
<td>1 044 922</td>
<td>49</td>
</tr>
<tr>
<td>Metros</td>
<td>2 362 414</td>
<td>50</td>
<td>3 936 616</td>
<td>64</td>
</tr>
<tr>
<td>South Africa – excluding the metros</td>
<td>1 460 998</td>
<td>21</td>
<td>2 748 005</td>
<td>33</td>
</tr>
<tr>
<td>Total South Africa</td>
<td>3 823 412</td>
<td>32</td>
<td>6 684 621</td>
<td>46</td>
</tr>
</tbody>
</table>

TABLE 5: HOUSEHOLDS WITH IMPROVED SANITATION IN SECONDARY CITIES AND METROPOLITAN AREAS, 2001 AND 2011

<table>
<thead>
<tr>
<th>Category</th>
<th>Flush toilets 2001 (n)</th>
<th>2001 (%)</th>
<th>Flush toilets 2011 (n)</th>
<th>2011 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary cities</td>
<td>919 828</td>
<td>60</td>
<td>1 439 289</td>
<td>68</td>
</tr>
<tr>
<td>Metros</td>
<td>3 531 113</td>
<td>75</td>
<td>4 936 923</td>
<td>80</td>
</tr>
<tr>
<td>South Africa – excluding the metros</td>
<td>2 356 435</td>
<td>33</td>
<td>3 306 001</td>
<td>40</td>
</tr>
<tr>
<td>Total South Africa</td>
<td>5 887 548</td>
<td>33</td>
<td>8 242 924</td>
<td>57</td>
</tr>
</tbody>
</table>
### TABLE 6: PROPORTION OF HOUSEHOLDS WITH NO ELECTRICITY ACCESS IN SECONDARY CITIES AND METROPOLITAN AREAS, 2001 AND 2011

<table>
<thead>
<tr>
<th>Category</th>
<th>2001 (n) No electricity</th>
<th>2001 (%) No electricity</th>
<th>2011 (n) No electricity</th>
<th>2011 (%) No electricity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary cities</td>
<td>359 397</td>
<td>23</td>
<td>273 964</td>
<td>13</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>900 587</td>
<td>19</td>
<td>671 861</td>
<td>11</td>
</tr>
<tr>
<td>South Africa – excluding the metros</td>
<td>2 607 594</td>
<td>37</td>
<td>1 535 899</td>
<td>19</td>
</tr>
<tr>
<td>Total South Africa</td>
<td>3 508 181</td>
<td>30</td>
<td>2 207 760</td>
<td>15</td>
</tr>
</tbody>
</table>

### TABLE 7: NUMBER OF HOUSEHOLDS LIVING IN INFORMAL DWELLINGS IN SECONDARY CITIES AND METROPOLITAN AREAS, 2001 AND 2011

<table>
<thead>
<tr>
<th>Category</th>
<th>Informal dwelling 2001 (n)</th>
<th>2001 (%)</th>
<th>Informal dwelling 2011 (n)</th>
<th>2011 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary cities</td>
<td>349 309</td>
<td>23</td>
<td>376 536</td>
<td>18</td>
</tr>
<tr>
<td>Metros</td>
<td>1 017 545</td>
<td>22</td>
<td>1 121 563</td>
<td>18</td>
</tr>
<tr>
<td>South Africa – excluding the metros</td>
<td>818 686</td>
<td>12</td>
<td>841 170</td>
<td>10</td>
</tr>
<tr>
<td>Total South Africa</td>
<td>1 836 231</td>
<td>16</td>
<td>1 962 733</td>
<td>14</td>
</tr>
</tbody>
</table>
CONCLUSION

• Much similar to metropolitan areas
• Substantial role in addressing urbanisation
• But, long term risks linked to commodities
Rapid Urbanization under Poverty: Coping with new emerging Mosaics in African Cities

Kombe, W. J.
Ardhi University
N-aerus Workshop
Dortmund, November 18th – 20th

12/17/2015
Contents

• Urbanization Trends and Urban Development in African cities
• Recent Institutional Reforms
• Emerging Urban Mosaics in African Cities
• Post-industrialization and Deregulation in Europe: What lessons for Africa
• Conclusion and Food for Thought

Urbanization Trends

• Between 2005 and 2010, urban areas in Africa expanded 2 times the world average growth
• Some cities doubling population every 15 years
• 60 per cent urban by 2050
• Exponential urban population growth despite chronic public and private poverty
• Intermediate and small towns (<500,000) major recipients
East Africa: % of Urban Population 1980-2030

Key Features of Current Urban Planning Systems and Practices

- Urban planning system and practice – colonial imprints
- Comprehensive controls/regulations
- Stakeholders participation weak/ineffective
- Standards and regulations exclude the poor
- Institutional contexts underestimated
- Apprehension to urban planning esp. PU areas
- Formal-informal hybrids, coexistence, complementary
- Fragile states and weak governance/civil societies
- Highly diversified cities yet with many commonalities
Peculiarities of African Urbanisation and Urban Development

- Sharply contrast trends elsewhere - East Asia and Pacific, Middle East and North Africa; Latin America and Caribbean
- Widespread public and private poverty
- Little infrastr. Investment; instns. dev’t and fiscal base
- Urban growth without basic/back borne infrastructure
- US$ in DSM, Lusaka, Addis, Kampala; US$ 240 in Asia; US$ 750 LA
- Between 40 -60% wastes uncollected
- Only 50% water on the plot
- Widespread informality vs. low transaction costs
- Increasing negative externalities

- Dysfunctioning land/property market, urban form and structure
- African cities – key pillars of economic growth
Urbanisation vs. GDP in selected African countries 1985-2011

Source: World develop. indicators
Urbanisation vs. GDP in selected Asian countries 1985-2011

Urban Mosaics in African Cities

- **Drivers of the emerging mosaics**
  - Institutional (selective) reforms – Tanzania, Kenya, Sierra Leone, Ethiopia
  - Intensification of informality
  - Sporadic PU land supply – plot supply schemes/projects
  - Creation of new towns & satellite cities
  - Unmanaged redevelopment and gentrification
  - Formalization and regularization
I. Recent Institutional Reforms

i.e. in Tanzania, Kenya, Ethiopia, Rwanda and Sierra Leone: Silent features

I. Tanzania
- New Housing Policy (2014)
- Emphasis - formalization, regularization and upgrading
- Priority spatial planning - large cities
- Establish satellite cities & new towns
- Private sector critical player – rental housing
- Responses to informality reactive and palliative
- Emphasis on middle/high income
- Acute shortage of trained technical staff planners staff – 0.34 planners/100,000 inhabitants

II. Kenya
- 2013 Constitutional provision for the right to housing
- Decentralized planning – County level
- Mandatory citizen participation
- Inventorise, formalize/ legalize informality
- Progressive but palliative responses to informality
- Planning and plans (IDPs) vs. land questions
- Acute shortage of skilled personnel – 0.47 town planners/100,000 inhabitants
III. Sierra Leone

- Town and County Planning Act (2014)
- Mandatory stakeholders participation
- Absence of policies and strategies for informality
- Extremely weak planning system
- Apprehension to planning – elites vested interests
- Severe shortage of skilled planning personnel

IV. Ethiopia

(Revised Proc. 206 of 1981)

- Land use planning increasing but ineffective
- Po-poor housing policy
- Massive housing delivery
  (But pro-poor standards (housing projects) unaffordable by 90% of target popn.)
- Mandatory community participation
- Poor opt for the informal (inf. market esp. PU)
- Stakeholders’ inputs not making a change = generally not considered in planning decisions
- Coercive responses to informality; informality prevails
- Weak LGAs
II. New towns & satellite cities – Kenya, Tanzania, Rwanda, Ghana, DRC...

- Replicas - Dubai, Singapore and Shanghai
- Modernize and decongest existing cities
- Attract international investments
- Establish world class city, smart cities, eco-cities...
- Boost building land supply
- Political interests and legacy

Satellite cities and new towns

- *Tatu and Konza cities in Nairobi* – series of 15 satellite cities Nairobi Metro 2030
- *Hope city in Accra* - technological hub, green building technology
  - Tallest building in Africa
- *Luanda satellite city*
  - State of the art structures
  - Up-market housing (150,000-2000U$/unit)
  - Series of new towns.
• **Tatu and Konza cities in Nairobi** – 15 satellite cities Nairobi Metro 2030
• **Hope city in Accra** - technological hub, green building technology
  - Tallest building in Africa
• **Luanda satellite city**
  - Modern structures
  - Up-market housing (150,000-2000U$/unit)
  - Series of new

Konza Techno City, Nairobi
Hope city, Accra

Source:https://en.wikipedia.org/wiki/Hope_City

- **Kigamboni new city** in Dar es Salaam
  - Ultra-modern urban centre
  - One of the satellite cities – others Luguruni and Kawe
  - Decogestion/extension of CBD
  - Modernise structures and infrastructure
- **Kawe Down Town** in Dar es Salaam
  - Up-market residential and commercial structures
  - National Housing Corporation and U.A.E business tycoon
  - Middle and high income tastes and needs
Rapid Urbanization under Poverty: Coping with new emerging Mosaics

Prof. Dr. W. J. Kombe

N-AERUS XVI
Dortmund, 19th – 21st November 2015

Kigamboni city, Dar es Salaam
Source: http://kigamboninewcity.com/master-plans

Kigamboni city, Dar es Salaam
Source: http://kigamboninewcity.com/master-plans
Are new towns/satellite cities the answer?

- Integral part of the global real estate investments
- Sharp contrast vs. socio-economic, institutional and cultural realities
  (World class entities vs. chronic urban poverty)
- Over-stretched public resource capacities vs. elites interests
- Accentuate inter and intra-urban inequality/exclusion
- Weak rural-urban linkages vs. productivity /livability
- Structural /governance issues – misrepresentation of urbanism in poverty – human face of African cities
  - False expectations

III. Intensification of Informality

- Major positions  Drawn skeptics and hopefuls
  • Mode and strategy of ‘right to the city’ by the poor and negotiated spaces
  • Deregulated mode of urban development
  • Mode of access to housing and land markets by the poor
  • An organising logic
  • Counter modernity
  • Deliberate suspension of order
  • Cities in the making
  • Hitherto responses ineffective - informality intensifying
  • Social institutions vs. property rights, agile and decentralized; every day practices of the poor
Over-densification in informal settlements

Informality in peri-urban areas (urban sprawl)
IV. Peri-Urban Land supply projects

- Public/LGAs and private companies
- Peri-urban land grabbing and reaping the poor
- Land delivery for business/money making and without basic services

V. Redevelopment and Gentrification

- Responses to economic opportunities
- Piece meal development
- Deeply informality – private interests
- Middle/high income: poor/livelihood displaced

Post-industrialization and deregulation: Lessons for African cities?

- Life threatening living and working conditions
- Severe resource and institutional deficits
- Failure to restrain rural-urban migration
- Increased public health threats/risks
- Slums generation
- Poor basic infrastructure services
Strategic responses

- Spatial planning - selective interventions (macro urban management) – few guidelines
  - Hobrecht Plan of Berlin – reserve for roads & utilities, building height 6/7; setbacks;
- Detailed planning – private sector role (with min. guidelines – radius of fire engines, min. size of interior court yards)
- Priority basic infrastructure – safe water, sanitation, gas and electricity
- Transformation of cities vs. economic growth

Informality in South European countries

- Deregulation and tolerance vs. peri-urban informality – Rome, Madrid and Athens
- Regime change (Spain) – democratic govt. illegal chabalos to legal; negotiation;
- Land subdivision (semi-regular) - without master plans
What Lessons?

- Historic experiences - post-industrialization interventions and deregulation/tolerance of informality - strategic decisions/responses to severe capacity deficits – simple and doable
- Deregulated informality - housing shortage but imply high costs retrofitting
- Workers institutions and associations - critical players - pressure groups/ negotiator for poor
- Migrants into urban vs. economic growth

Conclusions

- Urbanization without concomitant economic and institutional transformation requires alternative planning and governance systems. What paradigm for Africa?
- Ambitious spatial planning and development interventions - increasingly marginalized but indispensable. What options for African cities?
- Emerging mosaics-products of socio-economic and political context - Market forces increasingly shaping African cities - without checks and balances. How to reduce impacts/costs?
- Statutory and policy reforms critical but insufficient - what urban governance questions & impediments?
Conclusions contn.

• Planning more important now than before (Financial crisis 2008)
• The role of the state – statutory roles/mandates
• Informality vs. low transaction costs – not a residual but mainstream force
• Planning and urban dev’t driven by powerful actors

Food for thought

• Rapid urbanization vs. national development agenda in African countries? Are our the priorities correct?
• Supra-institutional reforms vs. weak governance and grassroots institution. Who are the champions?
• What are options are there for the weak states; economies and institutions/governance to manage emerging mosaics?
• How to handle time bomb in the making - small and intermediate towns?
• What lessons/opportunities are inherent in informality?
• What is the future planning& urban dev’t in African cities? A planning question per se or grandiose concepts and plans? Fragmented mosaics?
THANK YOU FOR YOUR ATTENTION
ABSTRACT
A city is a process, where it evolves from a small settlement to a village followed by a town and growing into a city. And it doesn’t stop here; it further goes on to be a large city or a metropolis. Hence, it is critical for us to know factors that affect the growth of our towns and study their reason(s) for evolution.

In India, in the state of Rajasthan, Sheoganj and Sumerpur are twin towns on the opposite banks of Jawai River. These twin towns are in the same agro climatic region with similar means of production and separated from each other by Jawai River.

This research explores the question of „Why and how do urbanisms characteristics vary in twin towns with similar agro climatic context and resource base“. The objective of the paper is to examine the differences and diversity between the twin towns and investigate the possible reasons for this by determining its journey of evolution and the process of urbanization of Sheoganj and Sumerpur. The argument of this paper is built on the two lenses: Economy and Gender Parity. A mix methodology is used for the research, i.e.: Quantitative data sets and Qualitative data tools.

The key results of the paper are: There is a great economic, historical and social diversity between both the towns of Sheoganj and Sumerpur despite the presence of similar moulding factors in terms of geography and cultural setting. Sheoganj has major markets of luxury goods and Sumerpur focuses on agricultural products. Other major finding of this research is that Sheoganj is more gender friendly
then Sumerpur, which is because of migration of work force and their exposure of the society to other large cities like Mumbai.

**KEY WORDS**

Twin Towns; Medium size Towns; Economic Diversity; Gender Parity; Culture
INTRODUCTION

“A city is not an accident but the result of coherent visions and aims” – Leon Krier

City goes through a process of development, from a small village to an aspiring dream. It is important to focus on all the stages of the process. This paper talks about two twin towns in the state of Rajasthan which are divided by a river. It focuses on the key drivers of development that lead to diverse urban pattern.

![fig. 1] Site context of Sheoganj and Sumerpur
Source: (Nagar Niyog Vibhag Rajasthan, 2015)

In India, in the state of Rajasthan, Sheoganj and Sumerpur are twin towns on the opposite banks of Jawai River. These two towns are located in the same agro climatic region with similar means of production and are located just 500 meters apart from each other by Jawai River. In the North is Sumerpur and South of the river is Sheoganj [Fig. 1]. Sheoganj is a Municipality\(^1\) since 1949 whereas Sumerpur became a Census Town in 1971 and later in 1981 became a Municipality. Sumerpur became a town seven decades after Sheoganj but today Sumerpur is a larger town than Sheoganj. Sheoganj is a Tehsil (sub district) of Sirohi district in Rajasthan with the population of 27198 (Census, 2011), and 5377 numbers of households. Sumerpur is a Tehsil (sub district) of Pali district in Rajasthan with the population of 37093 (Census, 2011) and 7036 numbers of households. Both the towns are „Class III”\(^2\) towns as classified by Census of India which are the medium sized towns. Ever since the Jawai dam was built on the Jawai River, both the towns have witnessed progress in their development. An active railway station named as „Jawai Bandh Station” was constructed near this dam which is a part of the Delhi-Mumbai corridor.

\(^1\) A town or a district having local government. (Dorling Kindersley Limited and Oxford University Press, 1998)

\(^2\) Class III Town  population size ranges from 20,000 to 50,000 (Census of India, 1961-2011)
Given this background, the central aim of this research is “To understand the diversity in the Urban Characteristics of medium sized Twin Towns; Sheoganj and Sumerpur.” For this research, „Diversity” is interpreted as the distinguishing characters and distinctive features of both the towns. „Urban Characteristics” is interpreted as the development features of the twin towns.

The specific research objectives are:

- Understand the different/distinct characteristics between Sheoganj and Sumerpur
- Analyse the reasons for the differences and distinct characteristics of both the towns.

RESEARCH METHODOLOGY

The following methodology is used for the achieving the aim of the research.

The research consists of mix methods: qualitative and quantitative methods. The data collected are two categories: primary and secondary. The chart below [table 1] shows the sources and tools which are required to collect each data type.

<table>
<thead>
<tr>
<th>Qualitative</th>
<th>Quantitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Focus Group Discussions (FGD)</td>
<td>- Primary Handbook, Census of India</td>
</tr>
<tr>
<td>- Key persons Interview</td>
<td>- Block Office (Education departments)</td>
</tr>
<tr>
<td>- Field Observation</td>
<td>- Municipality Data</td>
</tr>
<tr>
<td>- Ethnography (Observant)</td>
<td></td>
</tr>
</tbody>
</table>

[table 1] Methodology Matrix

The below table [table 2] shows the Methodology which has been adopted for the study. Each Objective has two stages. Every stage is explained through the plan for it and the method used to execute the plan.

Initially the six urbanism dimensions were used for the research, i.e. Economy, People/Society, Social Infrastructure, Governance, Infrastructure and Environment. Each dimension has a set of specific indicators:

- **Economy**: Average Household Income, Work Force Participation Rate (WFPR), Sector-wise WFPR, Establishments Registered, Establishment Types, Goods Manufactured-exported-imported.
- **People/Society**: Literacy Rate, Growth rate, Density, Sex-ratio, Slum ratio, Child Mortality, Mother morality, School Dropout rate, Social Institution, Migration, Caste-Religion, BSNL Directory.
- **Social Infrastructure**: Number of Schools, Types of Health centres, Parks & Playgrounds, Cultural Events, Housing Data, House Rate, Building permissions of last 10 & 5 years.
- **Governance**: Municipality Structure, Municipality Capacity, Number of elected members, Elected members Political party, Municipality budget.
- **Infrastructure:** Board brush Land use, Roads, Water supply, Sewage, Streetlight, Power supply, Power cuts, Transportation, Vehicle Registered, Peak hour PCU.
- **Environment:** Ground water quality, Green cover.

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Stages</th>
<th>Plan</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Find the different/distinct features between Sumerpur and Sheoganj</td>
<td>1 - A</td>
<td>- Build rapport with locals and local official in the towns</td>
<td>- Interaction with people</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Collect Census Data of last 5-6 Decades</td>
<td>- Go to Statistics Department of Both the Districts</td>
</tr>
<tr>
<td></td>
<td>1 - B</td>
<td>Extract the data and analyze it</td>
<td>Use tools like Excel and Graphic Information tools.</td>
</tr>
<tr>
<td></td>
<td>2 - A</td>
<td>Collect the remaining data from the people and government departments</td>
<td>Visit all the concerned offices and collect the data from them.</td>
</tr>
<tr>
<td>2. Find the reasons for the differences and distinct features of both the towns</td>
<td>2 - B</td>
<td>Determine the „What” aspect of the study</td>
<td>Analyze all the data collected and determine it</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Look for reasons for the differences and distinct features of both the towns</td>
<td>Interviews, FGD, Field Observation, Archival Data.</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Draw conclusion</td>
<td>Analyze all the work done and conclude</td>
</tr>
</tbody>
</table>

**RESULTS**

**BRIEF ON SHEOGANJ AND SUMERPUR**

**Geographical Information:**
Sheoganj is a town located at the south bank of Jawai River in Sirohi District. The average elevation is
260 meters and location coordinates are: 25.15° N 73.07° E. Sumerpur is a town located north bank of Jawai river in Pali District, location coordinates are: 25.09° N 73.05° E. The nearest railway station is named “Jawai Bandh Railway Station” which is part of Delhi to Ahmedabad and Jaipur to Mumbai railway route. Hence, it has great connectivity to Delhi and Mumbai. National Highway 14 passes from these towns which is a 4 lane Highway. Ahmedabad is 302 km from here; Delhi is 635 km and Mumbai is 826 km (Google Maps).

History and Evolution: Sheoganj and Sumerpur are located in State of Rajasthan. Historically they were a part of the Rajputana3, “the land of Rajputs”. Rajputana is divided in the following Princely states: Alwar State, Banswara State, Dholpur State, Dungarpur State, Hadoti, Bharatpur State, Bikaner, Jaipur State, Jaisalmer State, Jhalawar State, Kisangarh, Marwar, Mewar, Mundru, Pratapgarh State, Shahpura State, Sirohi State and Tonk State (The Indian Princely States, 2013).

Sheoganj:

Sheoganj was a part of Sirohi State [fig. 2] which was a princely state of the Rajputana Agency with Sirohi as the capital. Sirohi state was established in 1405 and existed till the Indian Independence i.e 1947; the state lost its independence to the British in 1823 and became a part of the British Raj. In 1837 Maharao Sheo Singhji gave British Sarkar space for their cantonment on the bank of Jawai River. Commander in-charge Downing who was born in Erin Island, named this place after his birth place as “Erinpura” (Erinpura chaavni4). In 1860 this cantonment became the 43rd Regiment of the British Indian Army.

This force was also known as „Erinpuraah Irregular Force“ which was active from 1860-1922. There was no population here but after the force came in amenities were built, like: Hospital, Post Office, Dak Bungalow (Inn), British officer’s Bungalows, Gardens, Bazaar etc.

3 Rajputana – „the land of Rajputs“: who were one of the royal legacies in India. In present day the India states of Rajasthan; parts of Gujarat and Madhya Pradesh; Parts of Pakistan were part of this historical region.

4 Chaavni: Cantonment Area.
After Erinpura chaavni was developed, in 1855 Maharao Sheo Singhji housed a Town named after him as “Sheoganj” near Erinpura chaavni; Lauda Juhamalji of Pali was appointed as the Nagar Sheth of Sheoganj. Merchants from Pali and other citizens dedicatedly got into the development of Sheoganj. Maharao made the following policies to attract merchants to this new town: 1.25 rupees for one plot; reduce the taxes for merchants. Because of this people from outside settled here.

All this made Sheoganj a very important town in the tehsil. Hence, villages of this tehsil came to Sheoganj to buy commodities. Sheoganj had no land originally; all the land was given by Badgaon’s feudal lord (fiefdom). Later, as per the 1955 „Rajasthan Tenancy Act”, the people who were practicing farming on the land got the ownership.

Wheat, jawar, corn, sesame, mustard, plastic goods, vegetables, oil, peanuts etc were exported from Sheoganj, where as jaggery, sugar, cloth, iron, glass, building wood, stone slab, tea, hosiery, medicines etc. were imported. All these goods were traded with Mumbai, Ahmedabad, Gujarat, Delhi, Punjab, Uttar Pradesh and Malwa. Industries that existed were: machinery industry (umbrella sticks, plastic bangles, power loom cloth, oil, embroidery work), paper printing press, photography, wood cutting, grass cutting, dyeing, peppermint making, bangles (made of elephant teeth, fake teeth, plastic, rubber). Sheoganj has a location advantage of being on the Delhi – Mumbai route. 30 December, 1880 Erinpura t Station came into existence which got renamed as Jawai Badh Railway Station in 1964; this station is a part of Delhi – Mumbai railway route. Delhi – Ahmedabad highway which was constructed during 1871-1873 also passed through Sheoganj.

Provision of public toilets and drinking water booth is in the main market area where all citizens of the town, travellers and customers from outside can avail the service. There are drinking water booths near the highway for the travellers travelling at night on the Delhi- Ahmedabad highway. There is provision for birds and animals at different spots in the town. Sheoganj, being a dry region, water becomes a very important factor; hence providing so many water booths facilitates the visitors of the town who come to the market. There are Dharamshalas in the town for visitors to stay.

The streets and crossroads are named after many great Leaders like: Maharishi Dayanand Marg, Mahatma Gandhi Marg, Patel Marg, Subhash Maidan, Gopinath Marg, Nehru Marg, Pratna Marg, Sharda Marg, Agrasian Marg; Aazad Chowk, Gandhi Chowk, Ganesh Chowk, Hanuman Chowk, Holi Chowk, Patel Chowk (Vanprasthi, 1994).
Sumerpur:
Sumerpur was a part of Marwar/Jodhpur State [fig. 2] which was a princely state of RajputanaAgency with Jodhpur and Mandore as the capital. Marwar State was established in 13th century till theIndian Independence. 14th February 1898 Sumer Singhji was born who was the eldest son of MaharajaSardar Singhji. 5th April 1911 he became the king at the age of 13. As he was very young Sir PratapSinghji was the acting king.

In 1899 Sirohi State implied 31 taxes on people like farmers, merchants, parents who wanted to adoptetc. Due to this Sheth Panrajji Surana started dreaming of a new town on the opposite bank ofSheoganj town, so he went to the Maharaja Sumer Singhji and Sir Pratap Singhji and expressed hisidea of a new town. He showed the plan of the town with wide roads and markets and proposed it to be.named after Maharaja Sumer Singhji as “Sumerpur”. Sumerpur was established on 15th March 1912and Sheth Panrajji was made the Nagar Sheth of Sumerpur. To promote the town Marwar State lifted33 taxes. In 1941 King George of England made Sumer Singhji British India’s Army’s HonoraryLieutenant. This was the time when World War I was on between England and Germany and, Turkeywas supporting Germany. Hence, Turkey’s prisoners of war were sent to Jodhpur Central Jail. Aftersome days these prisoners were shifted to Sumerpur in the state of Marwar where barracks were built.All the citizens of Sumerpur were given rupees 1,57,076 and sent to a nearby village named Undri asatemporary stay and the Marwar state promised to give double land back after the Barracks were resolved.
Sumerpur grew into a town post independence period. Shri Babulal Rajguru was the first *Sarpanch* (head of the village) in 1952. He was the *Sarpanch* 4 times in a row; he was also a journalist and freedom fighter. He helped: in making wells; workers; develop hospital; constructing pipeline and water tank; setup roads and gutters; old people and the *dalits*; in building schools. He brought modern farming from America and got irrigation water from canals for farmers. On 2nd October 1956, with permission from the merchant association, he setup the *Mandi* (Grain market on which Sumerpur thrives today). On 2nd December 1959 he lifted tax on soil because of which brick and pottery industries were set up. In 1958 he setup conference for oil merchants and trained them to become more efficient. He also set up buses and bus routes to strengthen the connectivity with the surrounding villages. He restarted the Ramleela ground. He started library in 1953. He setup electricity house using 3 generators. In 1950 he fought against the *Samants* who did violence on women and in 1959 he setup a Mahila Mandal Sumerpur Bhavan for poor and widowed women. Sumerpur is a memorial of Shri Babulal Rajguru who died in 1962. Shri Babulal Rajguru is called the “Gandhi of Sumerpur”. Sumerpur is a town which values all the leaders of Indian history as it came into existence due to visionary Sheth Panrajji and then developed in the hands of Shri. Babulal Rajguru. Both these leaders played very important actors in decision making. There are more than 15 statues of great people of the Indian history which are located on junctions and public spaces. They are the following: Shri. Babulal Rajguru Circle, Gandhi Murti, Maharaja Umed Singh circle, Maharaja Hanuvant singh, Bhagat Singh, Dr. Bhimrao Ambedkar, Mali Gahe shji (Ganesh circle), Jaasi ki Rani Laxmi Bai, Mahatma Jyotiba Phole, Dev Nagri, Chandra Shekar circle, Dindayal Upadhay circle and Shwami Vivekanad (Gaud, 2012).

Demography:
Sumerpur became a municipality after Sheoganj. Yet Sumerpur has a higher growth rate then Sheoganj [fig. 4]. Sheoganj has had a low growth rate which was irregular due to flood in 1974, plague break out in 1967. Hence, you see a major drop in growth rate of Sheoganj and Sumerpur from 1961 to 1971. Sumerpur has had a high growth rate after it became a municipality (Census of India, 1961-2011).

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5 *Sarpanch*: He/she is the head of the village community and a focal point of communication with the community.

6 *Dalits*: it means oppressed, it is referred to the lowers class community who were considered untouchables.

7 *Samants*: feudal lords.
The land use pattern is same in both the towns [fig. 5] Sheoganj and Sumerpur both have the market/bazaar in the centre of the town encircled by institutions and residences. The industrial area of Rajasthan State Industrial Development Investment Corporation Limited (RICCO) is located on the edge of both the towns. Sumerpur has more Kachchi Basti 8 the Sheoganj which are located in the western part of the city; the big red patches east of Sumerpur are the Private and Public Colleges. Sheoganj has more open spaces than Sumerpur.

8 Kachchi Basti: Informal Settlements.
ANALYSIS OF LENS 1: ECONOMIC DIVERSITY

Commercial Sector:
Sheoganj has a retail market of wedding clothes, general clothing, hosiery, jewellers, sweets and bangles etc. All these goods are wedding oriented which are not required everyday and can be tagged as luxury goods. This market is situated in the main Bazaar area. The hinterland is beyond the tehsil which expands to all nearing districts. People from north Gujarat, Mumbai, Bangalore, Chennai come here to do wedding shopping. There is a wholesale vegetable market near the bus stand where vegetable vendors from surrounding villages including Sumerpur come to buy vegetables. Sheoganj market has provision of public toilets and public drinking water facility for the consumers and merchants of the market. Females being the equal consumer of this market are facilitated by these utilities during shopping. Consumers of this market come from outside so these basic facilities are very helpful (Vanprasthi, 1994).

Sumerpur has a Mandi where you get wheat, chilli, cotton, oil etc. It has one of the largest markets for mustard seed. The Mandi is wholesale market located in the centre of the town. The Mandi Road is around 15 meters wide and a double carriage, which eases the movement of trucks as they are a major component of the market because loading and off loading activity happens throughout the day. The Mandi has generated lots of opportunity for the labour class on daily wage basis; these labours are from the surrounding villages that have formed kachchi basti in the west of Sumerpur (Gaud, 2012). The kachi basti area was originally gaucher land which is owned by the municipality. Due to urbanisation the requirements have changed and housing is in more demand. The municipality has given permission to the migrants to build their own houses. Under the Integrated Housing and Slum Development Programme (IHSDP) the municipality has allotted plot ownership and upgraded houses of the tenants with all the required documents and proof of stay (Chauhan, 2015). Many houses in the nearby area have been converted into warehouses as more rent is received. This has lead to movement of trucks in the residential streets, making it unsafe for children to play and women to gather outside their houses.

Industrial Sector:
Sheoganj has 171 acres of land under RICCO industrial area, where major production is, Dairy, agarbati (essences sticks), oil etc. Sheoganj also has Household Industries where embroidery, tailoring etc is done.
Sumerpur has 90 acres of land under RICCO industrial area, where major industries are granite, steel, oil etc. and automobile authorized service centres. Ornamental iron work is organized at small scale industries. There are automobile retailers near the highway.

Sector Wise Work Force Distribution:
Sheoganj and Sumerpur have the same distribution amongst the three sectors: primary, secondary and tertiary. Work force is majorly in non-primary activities but the difference is the type of market in the twin towns. In Sheoganj, the primary sector engagement has decreased from 10.1% in 1961 to 1.8% in 011. Where as, in Sumerpur, the engagement in primary sector has decrease from 17.3% in 1961 to 4.5% in 2011. When we compare the twin towns Sumerpur has higher worker in primary sector. There is land in the municipal area which is under agriculture in Sumerpur, as the market is of agricultural goods (Census of India, 1961-2011).
Main and Marginal Workers comparison:
The Ratio of Total Main and Marginal Workers are same across both the town, which shows that worker trends have been the same. Whereas the Female Marginal Workers have decreased over time in Sheoganj where as they have increased in Sumerpur. The reason for workers shifting to Sumerpur, from nearby villages, is availability of job opportunity as daily wage labourers (Census of India, 1961-2011).

Work Force Participation:
The Work Force Participation (WFPR) rate has slowly progressed in Sheoganj from 24.8 in 1981 to 28.4 in 2011. In Sumerpur the WFPR was 28.8 in 1981 and 28.4 in 2011 with fluctuations in between. Just like the overall Work Force Participation rate the female WFP has a similar trend. Sheoganj is taking a slow growth where as Sumerpur is undergoing an irregular growth. There is more Female WFP in Sumerpur than Sheoganj (Census of India, 1961-2011).

Reasoning:

<table>
<thead>
<tr>
<th>Urban Indicators</th>
<th>Development Sheoganj</th>
<th>Sumerpur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Markets</td>
<td>Luxury Goods Market</td>
<td>Agricultural Market</td>
</tr>
<tr>
<td>Industries</td>
<td>Agarbati and Oil</td>
<td>Granite, Steel, Iron</td>
</tr>
<tr>
<td>Goods</td>
<td>Non-Agricultural</td>
<td>Agricultural</td>
</tr>
<tr>
<td>Workers Distribution Sector-Wise</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>Main v/s Marginal Workers</td>
<td>Decreasing Female Marginal</td>
<td>Increasing Female Marginal Worker</td>
</tr>
<tr>
<td>Work Force Participation</td>
<td>Progressive Trend Participation</td>
<td>Standard Trend Participation</td>
</tr>
</tbody>
</table>

The above urban development indicators [table 3] justify presence of Economic Diversity in the twin towns. The twin towns are not comparable with each other as they have very distinct markets but a similar work force distribution. Sheoganj and Sumerpur, instead of competing with one another, they complement one another by their diverse characteristics. We look back at the evolution of the towns to gain better clarity on present development. The key actors of Sheoganj’s establishment are Maharaja Sheo Singhji and Lauda Juharmalji who developed Sheoganj as a regional market, which is retail in nature. The influence of Jain community on the market lead to trade of luxury and modern goods from the major cities of India. The infrastructure facilities in Sheoganj like public toilets, public water booth and connectivity by road and rail etc. facilitates its consumers and makes it a highly desirable shopping destination. The key actors of Sumerpur’s establishment and development are Sheth Panrajji Surana and Shri Babulal Rajguru who envisioned this town to be a regional market which is wholesale in nature. „Gandhi of Sumerpur“, Shri Rajguru brought modern agricultural technology and set up the grain market with supporting infrastructure like wide roads for movement of trucks, well connected road and rail routes etc. So, the decisions made by the key actors of these towns lead to the existing economic activities and urban patterns.
ANALYSIS OF LENS 2: GENDER PARITY

Sex Ratio:
Sheoganj has a better sex ratio than Sumerpur in all the decades [table 4]. This indicator is a sign of Sheoganj being more gender friendly than Sumerpur. Even the juvenile sex ratio states that Sheoganj is more gender friendly than Sumerpur (Census of India, 1961-2011).

<table>
<thead>
<tr>
<th>Year</th>
<th>Sheoganj</th>
<th>Sumerpur</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971</td>
<td>937</td>
<td>869</td>
</tr>
<tr>
<td>1981</td>
<td>928</td>
<td>889</td>
</tr>
<tr>
<td>1991</td>
<td>944</td>
<td>890</td>
</tr>
<tr>
<td>2001</td>
<td>920</td>
<td>910</td>
</tr>
<tr>
<td>2011</td>
<td>934</td>
<td>931</td>
</tr>
</tbody>
</table>

[Table 3] Sex Ratio of Sheoganj and Sumerpur

Educational Institutions:
There are more Educational Institutions in Sumerpur (53) than Sheoganj (25). Sheoganj and Sumerpur have same number of government institutions for female. Sumerpur has more colleges because it is located on the station road towards Jawai Bandh Station, which becomes more accessible for students coming from nearby villages. The colleges are located between the bus stand and railway station, which is also a highly commuted route by autos (Block Office of Sheoganj and Sumerpur, 2015).

Literacy Rate:
The overall Literacy rate is high in Sheoganj than Sumerpur; even the female literacy rate is higher in Sheoganj. But what is shocking is the fact, that there are more Educational Institutes in Sumerpur than Sheoganj including Government Institutions where the cost of education is the least (Census of India, 1961-2011).

Religion and Caste:
Jain community has positively influenced the town of Sheoganj. Since the early days of the British times the merchants from this community travelled to big cities, like Mumbai and Delhi, for trade. Along with new and fancy goods for the market they also brought the modernity from the cities. This slowly influenced the whole society and uplifted the women. The 1981 Religion figures show that Sheoganj has 22% of Jain people unlike Sumerpur which has 10% (Census of India, 1961-2011).

Parks and Play Grounds:
Sheoganj has 5.5 Ha of Park and Play ground and Sumerpur has 6.3 Ha Park and Play Ground; Sumerpur has more area under open space but Sheoganj is well distributed. But when we look at „Per Capita“, the open space in Sheoganj is 2sq.m and Sumerpur is 1.7 square metre.

Municipality Capacity:
All the Municipalities in the State of Rajasthan are under „Rajasthan Municipalities Act, 2009“ except for the Cantonment areas. Sheoganj Municipality was established in 1949 and Sumerpur Municipality was established in 1974. Sheoganj Municipality has 190 Sanctioned seats by the State Government out of which 126 are occupied; hence 34% seats are vacant in the Sheoganj Municipality. Sumerpur Municipality has 245 Sanctioned seats out of which only 129 are occupied; hence 47% seats are vacant in the Sumerpur Municipality. The vacant seats are majorly in the higher post.
Elected Members:
According to the „Rajasthan Municipalities Act, 2009” Sheoganj should have 8 seats for women. Currently there are 11 women members and 4 SC and ST of which 2 are women. So Sheoganj has followed the Act. Current standing committee chairman seat was reserved for a female hence women have more seats reserved for them as they fought in general seats for this opportunity to be the chairman. According to the „Rajasthan Municipalities Act, 2009” Sumerpur should also have 8 seats for women, 5 seats for SC and ST of which 2-3 should be for women. Currently there are 8 women members and 5 SC and ST of which 1 is a woman. Sumerpur Municipality has fulfilled the reservation.

In the development of Sheoganj and Sumerpur women have participated only as members of standing committee. Sheoganj has better representation of women than Sumerpur in the current standing committee as the chairman person of the committee was to be a woman. On interviewing some Municipality members of Sheoganj and Sumerpur the reason they give for gender bias is that „women are less educated and can’t make decisions due to lack of knowledge in this field”’. Kanchan Solanki was the Chairman of Sheoganj Municipality Standing committee when this paper was written. Few interesting facts that she mentioned in the interview are: when women don’t get freedom hence they lack confidence; a women needs to get free from taking care of the clothing (that the society accept them, in this case saree) and then only she can do something; only by changing ones family it won’t help, the community as a whole needs to change (Solanki, 2015). Women in both the towns do fight for the ward level issues for helping improve their ward condition but in larger decision of the town they are less involved (Bhatti, 2015). Largely both the towns have same condition of women representation in the development of the towns.

Ethnography (Observant) / Feild Observations:
Commercial space:
Sheoganj is a retail market having a hinterland of all surrounding villages and big cities like Ahmedabad, Mumbai etc. This market supports the needs to its consumers who come from outside the town. Walking is the mode of transportation within the market as it has narrow streets. Hence, there is a provision of shade on these streets to beat the heat of this region [fig. 8], provision of public toilets and drinking water facility; there are many food stalls and small restaurants as well. Sumerpur has a wholesale market of agricultural products. There is a high movement of goods in the market and on loading and off loading of goods happens throughout the day. Hence, this market has wide streets for movement of trucks and hand carts [fig. 9]. Consumers of this market purchase in bulk, hence Sumerpur has a transportation hub of light and heavy consumer vehicles. One end of this market opens towards the highway and other end towards the centre of the town making movement easy.
Residential space:
Sumerpur is a wholesale market of agricultural products. These goods need space for storage. Many residential houses are converted into warehouses [fig. 10] as there is a large demand for it. People earn more rent for a warehouse than a residential house. This is degrading the life of residential streets and open spaces in Sumerpur. Many trees in the residential area are cut down to make space for heavy and light vehicles. Cutting of trees reduces gathering spaces because to beat the heat of this region, shade is very crucial. The movement of trucks is throughout the day as well as at late night making it unsafe for children to play and women to sit outside their houses. Sheoganj has very lively residential streets. Almost all the streets and open spaces are shaded with trees which keeps the area cool during the day [fig. 11]. This gives more opportunity to the children to play and women to gather outside their houses in the evening. Residential trespassers to disturb them being the predominant land use there are minimal. In this case we can directly correlate the economic activities and the spatial arrangement in the towns. In Sumerpur the emerging warehouses in the residential neighborhood to meet the demand of the Mandi has impacted in degradation of social life. Whereas the retail nature of Sheoganj’s market has kept the residential areas intact.

Culture:
In this cultural setting the frequency of women going outside their house is less. Eating outside on a food stall is considered as taboo especially if not accompanied by men and if they are married. Sheoganj has exposure from different cities as this town has many outside visitors throughout the year. As time has passed, society in this town has evolved. Hence, the society has accepted women coming
independently to the market and also consuming food items on the food stall [fig. 12]. Where as in Sumerpur women cannot independently move in the market; eating on food stall is yet considered a taboo. Hence, women in Sumerpur are compelled to exercise this freedom in Sheoganj market. This setting shows us how economic activities of a town influence its culture. Sheoganj’s economic activity has led to trading with major cities of India which brought modernity to this town and evolve the society to have an open mind. Sumerpur’s economic activity is primary sector goods, for which it mainly trades with the villages and small towns. Hence, Sumerpur has a very conservative society compared to Sheoganj.

Reasoning:
After Looking at the all the above indicators, it is evident that Gender Parity is an indicator that can be measured with the quantitative indicators and qualitative analysis. Table 4 shows the indicator in “Dark Grey” if the status is better than the other town comparatively and “Light Grey” if the status is poor. Analysing the table clearly shows Sheoganj as more gender friendly than Sumerpur. Despite the same culture settings and similar agro climatic region there is a gap in gender parity between the twin towns. The most influential factor is the economic activities which has shaped these towns spatially and culturally.

<table>
<thead>
<tr>
<th>Research Lens</th>
<th>Urban Development Indicators</th>
<th>Sheoganj</th>
<th>Sumerpur</th>
</tr>
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<tbody>
<tr>
<td>Gender Parity</td>
<td>Sex-ratio</td>
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<tr>
<td></td>
<td>Juvenile Sex-ratio</td>
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<td></td>
<td>Literacy Rate</td>
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<td></td>
<td>Number of school</td>
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<td></td>
<td>Types of health centers</td>
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<td></td>
<td>Parks/Playground</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Municipality Capacity</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Female Representation in elected members</td>
<td></td>
<td></td>
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</tbody>
</table>

[fig. 12] Women at a food stall in Sheoganj Market

[table 4] Lens 2 – Gender Parity Concluding Matrix
CONCLUSION

OBJECTIVE 1: DETERMINING THE DIFFERENCES BETWEEN THE TWIN TOWNS

Sheoganj and Sumerpur have always been two different towns because of the different set of actors which established and built the towns; the decision taken by them lead to diverse urban pattern in these towns. Historically, despite being so close to each other, they have been in two different princely states and were always ruled by different Maharajas. Even in the present day they are in two different districts of Rajasthan State. The intention with which they got established is also different. Sheoganj was established by Maharao Sheo Singhji near Erinpura as a regional retail trade center. Whereas Sumerpur’s establishment was initiated by Sheth Panrajji Surana with support of the Maharaja Sumer Singhji; later on after independence Shri Babulal Rajguru converted a small marke place like Sumerpur into a large market by his efforts and decisions.

After studying all the indicators of the 3 pillars of a city: Economic, People/Society and Political Representation, there are 2 very distinct differences that were found between these towns. They are:

1. Economic Diversity
2. Gender Parity

OBJECTIVE 2: REASON FOR THE DIFFERENCE BETWEEN THE TWIN TOWNS

Economic Activities:
Sheoganj and Sumerpur have a common Municipality Boundary; they are right next to each other with Jawai River in the middle. Due to their close proximity they seem to be similar but they are not. Sheoganj has the luxury goods market and Sumerpur has Mandi selling agricultural products. The reason for this is that they were established in different times. Sheoganj was built first and having a railway station 15 km away and a National Highway 14 passing through it, making the connectivity with other cities strong. Hence, merchants could travel long for the purpose of trade which made this a unique centralized market of wedding goods. Sumerpur has a Mandi which was established post independence by Shri. Babulal Rajguru who was the first Sarpanch of Sumerpur. Taking advantage of the well connected location like Sumerpur he set up the Mandi. It is a point of exchange where people in and around Sumerpur sell their goods to the merchants which gets processed in the industry and further sold in bulk to different tehsils surround Sumerpur. We cannot make a judgment on who is better in the economic activities, as both Sheoganj and Sumerpur are unique in their own way, celebrating their economic diversity.

Gender Parity:
Indicators like Literacy Rate, Sex Ratio, Juvenile Sex Ratio, Schools for Female, Elected members of the Municipality etc. have statistically proven that Sheoganj is more gender friendly than Sumerpur. “Chuda” are bangles worn in the arms of married women once they are wedded [fig. 13], which are bought by the in-laws for the bride. In 1962 Shri Gummaranamji Bhatti abolished "Chuda" for women in Sheoganj as they are painful and cause problems to them.

9 Chuda: White bangles worn on the forearm by married women. [Fig. 11]
But, Sumerpur yet follows this custom in the weddings. Having interviewed women of Sheoganj and Sumerpur they also feel that Sheoganj has more freedom for women than Sumerpur. In Sheoganj women freely eat on food stalls in the market but you don’t see that in Sumerpur as the society considers this as a taboo. Sheoganj is more gender inclusive because of the exposure bought by the Jain community from large cities like Mumbai in the society.


The journey of a mega city begins from being a small town or a village. Hence, to create a deeper understanding of cities, it is important to study the different stages that take place during the evolution. This research developed my understanding of medium sized towns. How the key actors shape the urban fabric and the way their decisions influence the development of the towns, was a question answered by this research. The rural and urban linkages between the town and the surrounding village is important for its survival and existence. The economy in these towns is highly supported by the surrounding villages which fall under the hinterland area. This research has highlighted, how a region with similar agro-climate and means of production can create different livelihood opportunities and different urban patterns

Acknowledgement
We would like to thank both the municipalities of the towns of Sheoganj and Sumerpur and their helpful teams. We also want to thank lead author’s relatives in the twin town for their support and time, especially grandmother (Shmt. Vasan tidevi), grand father-in-law (Shri Tejaram ji Ba), grand mother-in-law (Shri Gajribai), Shri Bhairji Tak, her own family and her husband (Nandeep Mali) for being extremely patient, encouraging and helpful in facilitating this research work.

REFERENCES


THE EXTENSIVE URBAN IN WESTERN AMAZON: PATTERNS OF SPATIAL TRANSFORMATIONS IN SIX CITIES OF PARÁ, BRAZIL

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ABSTRACT
This article adopts six cities (Maraba, Parauapebas, Canaã dos Carajás, Santarém, Altamira and São Felix do Xingu) as object of study, they are located in the West and South-eastern of Pará State, in Brazilian Amazon, both regions were under intense changes since the 1970s, due to the implementation of the Trans-Amazon Highway and rural settlements projects, followed by the installation of poles of mineral exploration, agricultural production and more recently by monocultures fields. The comparison of these cities seeks to identify emerging socio-spatial patterns in small Amazonian cities that are under influence of large influx of capital, which mix the urban-industrial logic and urbanization pattern arising from the metropolis to a standard of traditional environmental occupation and more adapted to environmental circumstances. It is conspicuous the occurrence of mobility patterns that unveil strong interdependence between cities and a new “rural”, where central functions are performed by more consolidated cities while less structured towns and villages perform functions outskirts, reproducing conditions of mobility and patterns of access to housing, services and equipment indicative of a polynucleation phenomenon, which is globally connected and generates distances and challenges comparable to those already faced in Brazilian metropolis.

KEY WORDS
Amazonian Cities, Spatial configuration, Urban rural transition, Extensive urbanization.
THE PHENOMENON AND ITS CONTEXT

This article approaches regional urbanization in Amazon and adopts six cities and its surrounding regions, located within Pará state in Brazilian Western Amazon, as evidence of a transition from a traditional pattern of scattered distribution of human settlements to the emergence of a new kind of urban fabric, composed by a grid of roads that have cities and villages as nodes, and appear to be representative of a new kind of polynuclear urbanization, that, in some cases, has already been institutionalized as metropolitan regions, not defined by continuous conurbation between pole city and other settlements but where countryside has had progressive degrees of densification.

In fact, case studies do not correspond to industrialized areas as classical cases of city regions, but have manifested some degree of synekism, understood as the developmental impetus that derives from densely settled habitats and stimulates urban agglomeration (SOJA, 2000:4) and were affected by recent capitalist metamorphosis and assimilation of Amazon as a frontier of natural resources exploitation.

Amazon was considered agrarian by Brazilian public policies, usually devised for regional scale, is presenting new urban formats, strongly based on capitalist rationality. It is experiencing what Monte-Mor (2014) defines as extensive urbanization, the ultimate capitalist socio spatial form, a phenomenon originated in a city (usually a metropolis) that penetrates regional spaces creating a global urban fabric, and dialectically connects dynamic areas and peripheries to centers and sub centers of capitalist system; it seems to be in a crossroad moment, in which either historical problems might be aggravated through imposition of homogenizing rationality or true innovation could best arise by addition of new work to old knowledge, as suggested by Jacobs (1975) towards the utopia of natural urban, as a following stage to urban industrial, able to acknowledge a balanced relationship with nature and the right of people, representative of different rationalities, to share a territory (MONTE-MOR, 2015).

Synekism is an issue because some of the cities selected are centuries old and have faced several waves of growth and restructuring thanks to cycles of products directed to exportation (always based on extrativism) since colonial times. This is the case of Santarém, Altamira, São Félix do Xingu and Marabá, all riverine cities that have thrived as ports and market places, inserted in a proto urban network, classified by Correa (1987) as dentritic, in which a primaz cities command small settlements that are not connected among themselves, but straightly connected with the city. Many variables have interplayed to highlight them as cities in a region seen as either wild, agrarian or as a frontier of natural resources.

The oldest Brazilian Amazonian cities were carefully placed to allow: the control of territory, massive exploitation of native products and their exportation to foreign markets, sovereignty over Amazon, and miscegenation of native and European population to better manage and exploit the biome (BECKER, 2013; COSTA, 2012). For centuries only two metropolises controlled the exportation of the whole region (Belém and Manaus) thanks to logistic dependence on rivers navigation, while other cities were kept small, to the extent of their isolation. Under such circumstances population developed a strong knowledge about how to survive with shortage of investments and technology using forest resources. Cities benefited from natural sites features to better provide water, housing and livelihoods to their inhabitants. They were places to exchange extractive products and to have access to some public
services for a myriad of small communities that had inherited the knowledge of original people about how to live harmoniously with the tropical forest. They did not need to live in the city, but depended on its market, services and social infrastructure (CARDOSO, LIMA, 2006).

The industrialization of Brazil and the decision of integrating Amazon through roads since the 1950s, opened up that region to a modern and industrial rationality. Officials and newcomers took it as a human desert, with plenty of land to be occupied by landless people from other regions, where land was already scarce. Despite the appeal of developmentalism, such position in fact has prompted social-environmental conflicts, and the worsening of historic problems. Generations of integration plans were conceived in the federal capital following an underlying urban rationality, perceived in the way land was parceled and funding and services were provided. These initiatives evolved from first roads and agrarian reform, to macro programs devised to boost private sector (funding for cattle raising, timber exploitation, monocultures) and Brazilian industrialization especially during the 1980s’ international economic crises (hydropower plans, mineral exploitation, ports), and excluded original inhabitants and non-qualified newcomers.

Privatization of federal companies, after the 1990s, fostered further changes. At that time importance of exports was reinforced from the country perspective and straight connections between natural resources exploitation sites to the global market were established. From this point onwards there was no need of classical Brazilian metropolis mediation for capitalist activities, thanks to new potential fluxes made feasible thanks new networks of roads, railways, ports, airports and telecommunication services. Small Amazonian cities became straightly subordinated to global market interests, positioned into a new social division of labor, dependent on commodities’ prices practiced in China or elsewhere. This is the backcloth to extensive urbanization observed in Western Amazon (see figure 1), investigated here to check how close emerging spatial patterns are a peculiar manifestation of what Soja (2002, 2011) claims to be a post metropolitan transition.

Data presented about cities explores how much of their inner urban fabric was produced according to either traditional or industrial modern rationalities, through association of built typologies to mercantile activities (focus on traditional open markets and ports, vernacular occupation) and industrial production (e.g.: logistics, official housing, real estate developments, company towns) respectively. The modernization also brought up an informal side, through informal settlements (e.g.: irregular developments, land occupation) that sometimes look like a more precarious version of traditional settlements/areas. The comparison of how changes in typologies has evolved among cities and of how much these changes respond to either contemporary capitalist strategies or to traditional resistances is an attempt to indicate trends and possibilities of conducting referred transition towards a more balanced relationship between city and nature and also between social groups. As nature was historically well managed by original inhabitants, to reduce invisibility of nature and local people would have environmental and socio-spatial outcomes, and the most desired for urban natural utopia would be true innovation by the mixing of old and new practices. Only after that Amazon could be “measured” by its own standards and have the chance to overcome poor grades for almost everything (usually based on metrics built from industrial rationality perspective).

CASE STUDY

In order to summarize the economic transition of Pará State over the last decades, figure 2 presents a timeline assembling time of foundation of studied cities and a more detailed historic of relevant external facts and their impact for the region and studied cities. The idea is to highlight how similar have been the waves of boom and restructuring across these cities, usually started by regional changes supported by external actors, either the official or private. Federal government and private sector share the same agenda for that region, and only because there was a quite strong rationality established before modernization it is still possible to watch signals of resistance. Old practices are, after a fifty to sixty years period of change, associated to backwardness, and related to popular economy (including traditional, solidarity and informal economies), that usually are less demanding in economic and natural resources. Most of formal economy is related to export and aims integration by consumption. However there is a perpetual mismatch, since there is not enough formal (industrial related) opportunities of work available or people with the required training to occupy positions on new activities, what leads to exclusion of old inhabitants from new dynamics. In the other hand, external investors many times still repeat what the main character of the German Peruvian movie "Fitzcarraldo" has done against people and nature to reach their aims.
The extensive urban in Western Amazon
A. C. D. Cardoso, A. C. Campos de Melo, T. do Vale Gomes


SPATIAL ORGANIZATION – CITIES AND THEIR REGION

Santarém is the oldest city, and presents the wider diversity of dynamics whitin its inner space, thanks to the power of traditional activities in its surroundings and also of the advancement of soy beans fields. From the traditional perspective it is observed that traditional communities live either in agroextrativist settlements nearby the main city or within forests, villages and traditional communities, many were supported for decades by work of NGOs, which togethwe with social movements managed to properly adaptate some public policies to their needs (mostly evironemntal and rural policies). However the connection to Mato Grosso state trough federal road BR-163, and introduction of soy beans monoculture along it, has favoured last Santarém’s adaptation to export (e.g.: port extension) and increase of land price followed by peripherization.

Recent changes in Brazilian financing regulations have transformed cities themselves as a product of capital, causing increase of urban land price all over the country (FIX, 2011). In Santarém periurban areas are contested by original inhabitants and the real state sector, commanded by local entreperneurs that aim to modernize the city and attract tourists and investors. Gated communities are pressing old traditional communities located close to Tapajós River and its awesome landscapes; soy fields press villages and traditional settlements. Inside Santarém former communities of fishermen were displaced from the waterfront to give place to ports, and thanks to land price, low income housing is migrating to smaller cities distant in average 60 kilometers (Belterra and Mojuí dos Campos). This new configuration has Santarém as center and e wider periphery formed by a mirid of new and old settlements, villages and cities (field work, 2014).
According to figure 3, within the city of Santarém almost 25% of the urban fabric corresponds to the mercantile city, and relates to the old regional market, while other 28% corresponds to planned space provided by the government over the 1970s as official settlements, urbanized areas and the airport surroundings. Another 26% were occupied informally after the 1960s (close to inner rivers) and expansion axes (roads). Only 8% of the urban sprawl corresponds to real estate sector development, but most of its activities is outside the city, contending the most beautiful landscapes with original inhabitants, their aim is to exploit monopoly surplus beyond other gains obtained by conversion of rural into islands of urban land. It highlights the conflict between well structured communities and the real estate sector, and the by the bias of local government that prioritises industrial rationality and wants to modernise Santarém attracting (already outdated) new capitalist strategies.

Similar process occur in Altamira, built at Xingu River margins, that polarizes Trans-Amazon Road’s rural settlements. It was crossed by cited federal road during the integration process and recently was highly affected by the works of a hydropower plant, located in the neighbour city of Vitoria do Xingu. Altamira had an important role during the 1970s, when Trans Amazon Road was opened and agrarian reform settlements were placed along it, according to a Christellerian proposal of Rural Urbanism (CAMARGO, 1973). Most of investments were directed to agrobusiness (mostly cattle raising) that ended up causing rural exodus and contributing to Altamira’s peripherization. After several growth phases of respect to site determinations, recent sprawl is overcoming all natural obstacles, eliminating them to provide land for speculative purposes. New social housing has been provided in Vitoria do Xingu, following the same trend observed in some other cities to provide low income housing many kilometers far from main sources of job (40km in this case), while the urban sprawl in Altamira is dedicated to high standard developments (NEGRÃO et al., 2015)

In this sense the strategy of real estate sector is different from Santarém, figure 2 shows that less than 5% of the city is old city, but other 20% is informally produced and is occupied by former rural inhabitants (including indigenous people, peasants) expelled from countryside since agrarian federal projects were in course. From that time there was a first generation of real estate developments accompanied by official housing estates. There was a strong polarity between rich and poor and an Catholic Church was also an important player in providing housing for the poor (signed as Other in typologies key of Figure 3). There was a network of social movements based in Altamira that was strongly negatively affected by Belo Monte hydropower building works, since some were supportive to federal government (due to its left wing orientation) while others were against it (Belo Monte), following local people orientation.

São Felix do Xingu was created by rubber soldiers that left Altamira to find new places to explore. The city was affected by several cycles of natural products exploitation straightly connected to external market (rubber, minerals, plants, cattle). Sadler (2015) shows that all export dynamics hardly affected the city, first because products were straightly sold to external market, and at present, because the land where the city is sited belongs to federal government, it is inserted in indigenous territory and could not give place to real estate sector practices spread over the region.

However the massive occurrence of minerals plus the cattle raising activity (the municipality has the biggest stock in the country) supports dozens of “rural” vilages, scattered through a precarious road
The extensive urban in Western Amazon
A. C. D. Cardoso, A. C. Campos de Melo, T. do Vale Gomes

system. Huge farms are commanded from São Paulo and Belo Horizonte (capitals of Southeast Region of Brazil) and are fully equipped with social and technical infrastructure. In São Felix remaining pioneers are considered fool, since they have not made money as new comers have. Curiously environmental degradation is the rule in rural and urban sites, and environmental issues have caused conflicts between new federal government position and expectations of settled migrants over the last decade in rural areas, and inside the city old sawmills give place to irregular development, that dismantle hills and cut off river margin vegetation, because at present to sell urban land, even not properly titled, gives more profit than any other urban activity (field work, 2012). Unfortunately the inner space of São Felix do not recognise old land uses as desirable by the city masterplan, and according to present zoning all riverine occupation is expected to be removed to give place to a contemplative waterfront.

In São Felix is located at the end of a state road and in a much less navigable river. Its urban fabric has less diversity; traditional and informal urban fabric prevail (see figure 4), since the city is build upon indigenous land, a break to action either of government or private sector. The last operates informally and cannot make profits similar to what it gets in other cities. It is usual to listen about people who have rural properties in São Felix but decide to live within more prosperous cities in the region, however owners of bigger properties live in other regions of the country.

Marabá, Parauapebas and Canaã represent the mineral frontier. Marabá, the oldest one, is crossed by two rivers – Tocantins and Itacaiunas, it was a typical traditional market city transformed by federal projects. It was crossed by two federal roads, one railway and received an regional airport. Since it received such logistics and federal strategic projects it gave origin to sixteen new municipalities, one of them was Parauapebas, that was also subdivided in a few others, originating Canaã dos Carajás. Marabá was the pole for many formal and informal mining activities (e.g.: Serra Pelada gold digging; Carajás Project) and was the city that most successfully brought together different functions.

As a strategic city, Marabá has received an ambitious new nuclei, partially funded by federal government to receive migrants and victims of regular floods. However the traditional city was never abandoned, and while the official city was built another nucleus was formed by private developments and irregular occupation. Thanks to that, Marabá resulted as an amalgamation of several nuclei, made apart by natural obstacles (rivers and flood plains) that provide a clear picture of the integration potential between city and nature (PONTES, CARDOSO, 2015). Despite that, over the last decade the city has received three new nucleus to settle poor people that were removed from already well located informal settlements, and to settle rich people that were searching for gated communities or high standards developments.

Figure 4 shows that traditional urban fabric accounts for 12% of the whole city, but is accompanied by other 33% of informally produced areas summing expressive 45% of spaces of resistance. 23% of areas directly or indirectly produced by federal government, that have historically housed officials, and upper and middle classes new comers. Over the last years urban sprawl has accounted for 18% of urban fabric following expectations of new federal and private investments that have not been fulfilled yet, it was polarized between private developments directed to upper classes, and social housing for workers funded by government but mass produced by private sector. Recent production of the city is less conditioned by natural obstacles, and tends to modify all site characteristics that do not fit business interests.

Beyond the closest periphery (the new nuclei dedicated to house the poor) which is nine kilometers
far, there is a proposal to institutionalise a metropolitan area of Marabá having it as core, and five other cities located at an average distance of 60 km as periphery. This set of cities is strongly connected to another group of cities that have Parauapebas as core. All of them connected by road.

Parauapebas is a quarter of century old and was originated from an informal settlement created outside an conservation area where a company town and a mining site was located (Carajás area). Conservation and economic interests were imbricated as Carajás was belonged to federal government. City consolidation was helped by the mining company, and since then, dependency of this activity is very high. It is the city with more formal places offered and its circumstances is the closest to industrial rationality, it does not have traditional inner space, and has tripled its size over eight years, thanks to the increase of investments in logistics and new mining sites made feasible after privatisation of the former federal mining company. Parauapebas polarizes four other cities, all of them dependent on mineral exploitation (one of them was the closest city to Serra Pelada). Among these cities one has been completely transformed over the last decade, Canaã dos Carajás, former village created to give support to agriculture activities, that since 20 years was emancipated from Parauapebas and houses in its domains the highest iron site on the planet.

Parauapebas is a “child” of informal settlements, well consolidated by federal government investments at the very beggining. It is only understandable when considering high standards set by the company town built inside the conservation area by the same federal mining company. Between late 1980s and early 1990s more informal settlements appeared, until the mining company privatization. After that, things changed a lot. Very speculative urban sprawl was started and real estate sector became the main producer in the city and accounts for half of the city (see figure 4). A clearance of informal settlements is in course by combined action of official and real estate sectors, it also was accompanied by dismantle of hills and landfill of flood plains, and homogeneization of landscape (site shape, presence of water and vegetation coverage) on areas of new developments.

Canaã had na informal origin, and did not receive the support to consolidate its inner space to the same extent that Parauapebas had, besides that the city was built on federal land, that was officially transfered to the city in 2011. Nowadays 50% of the city has an informal origin, and 30% was developed by the real estate industry, however these 30% were built over two years only, giving the extent of new players capacity to convert rural into urban land. Especulative conversion of land is occurring all over the municipality, reaching former small farmers’ villages, according to proximity to mining sites. Canaã has received a flow of 18 thousand male workers to the implementation phase of the biggest iron mining in the world, and authorities are still dizzy with new restrictive regulations and their dream of fast moneymaking.

Figure 4 shows how Canaã had a different history. It was also born informal, but did not receive the same care of federal government, since it became a mining city after privatization of the former federal mining company that was already established in the region. However urban sprwal in Canaã is more aggressive than it was in Parauapebas, and rates of growth of real estate sector developements are impressive. Villages are providing low income houses for those who cannot afford rents and properties values. Investments on housing production with official support are still very shy compared to private sector production and market solutions for housing workers. It is a quite different territory, but too close to Parauapebas to have the same trajectory, and reassured as a mining city when this activity is already automatized and dependent on a minimum of very qualified workers after implementation
phase. Canaã still has signs of water, expressive hills and blocks of vegetation that could give it identity, these attitude are valued by pioneer inhabitants, but neglected by newcomers. New equipments such as shopping centers are the most desired, while water falls, tracks inside the forest, archeological sites, and other attractions are invisible to most people that insist in deny nature in this very wealthy but monofunctional city.

<table>
<thead>
<tr>
<th>Santaré</th>
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<th>Urban Sprawl (ha)</th>
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<th>Urban Sprawl (ha)</th>
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<td>Formal - Public sector</td>
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### FINAL REMARKS

As stated in the initial premises of this paper, urban fabric of the six cities show a transition from the traditional spatial pattern to a new one, associated with the productive and economic processes of the contemporary capitalism. An extensive urban fabric was created, connecting core cities, peripheral cities and villages to the global net. We have observed the disappearance or reduction of the traditional urban fabric and the quick expansion of the urban fabric produced by real estate sector, through new urban products turned for consumption (malls, supermarkets, retail stores) and associated with the shift in accessibility (from river to roads), which made possible the transformation of old settlements.
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into fragmented periphery.

Traditional urban fabric is naturally more compact and associated to the human scale, places of exchange between the city and the forest (through open markets), which tends to be dismantled with the expansion of modern practices. This movement can be observed in the cities with riverine origin such as Marabá, Altamira e Santarém.

The cities with a significant part of the fabric officially produced are those which had or still have an strategic function, as a multimodal pole (Marabá); of services and infrastructure (Santarém and Altamira) and of economic activities (Parauapebas, Canaã), vocations established or reinforced since 1960, when the Government started acting in the Amazon in a more effective way, through major projects and development plans. In the cities where the private sector runs the spatial production real estate sector, land owners and companies create new developments reproducing their practices, without considering possible social and environmental impacts as their outcome. Conversely, informal fabric's grows, produced by the poor and migrating population, while local government is incapable to control such practices or providing infrastructure conditions for those areas.

Marabá, Santarém and Altamira are cities where the different spatial patterns (traditional, real estate sector, State production, informal) are mixed up; cities with greater diversity of typologies and where the distribution of these practices is more balanced. This diversification favors the manifestation of synekism (SOJA, 2000), due to their strategic localization, greater influx of activities, and waves of economic dynamism.

Canaã dos Carajás and Parauapebas have their localizations determined by the mines’ position, while Marabá and Santarém, were in strategic places at the banks of large rivers. Santarém, for instance, is halfway between the capitals Manaus and Belém, at the confluence of the Amazonas and Tapajós rivers. In the cities under greater transformation (Marabá, Santarém e Altamira), transition was not limited to inner city spaces, there was an overflow of the impacts over the periurban and rural environments. Through this, the core cities became the contact points between their peripheries and very distant centers (national and global metropolises).

Official action has proved to be very important for the guidance of the cities’s consolidation and expansion pattern, it can break urban-industrial rationality, through the institution of conservation areas, indigenous lands, agroextractivist areas. It was confirmed in the case of São Felix do Xingu, where prevalence of public land prompted formation of a more compact urban fabric and a slower absorption of typologies and processes associated with the most recent movements of capitalism, despite federal resources had been directed to support private sector’s rural activities.

But public sector is not homogeneous, eventually some policies can support a greater dialogue with society, but the rule is official support (local and national) to expansion of exogenous, urban-industrials practices.

A key issue for the survival of traditional strategies and the diversification of the urban fabric has been local resistance of social movements (indigenous, extractivists, urban and rural communities). At places where the urban or rural social movements are not active, the exogenous practices have been more successful at becoming hegemonic.

Timid official actions has favoured the expansion of processes associated with other contexts, which
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homogenize space, without noticing the historical accumulation and preexisting life ways, associated with rationalities more sensitive to the biome. Nowadays, both the federal and local governments have favored modern dynamics, mainly export activities (cattle raising, soya, corn), without realizing the cities’ potential for innovation supported by local knowledge, that might be useful not only to the preservation of Amazon forest but also to the improvement in the quality of life in Brazilian cities located in other contexts.

REFERENCES
INTO THE EMERGENCE IN AMAZONIAN CITIES

MARABÁ: LOSSES OR POTENTIALS?

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ABSTRACT

Beyond the megacities challenge, cities on economic frontier conditions in the Amazon articulate a great potential for innovations in urban planning and design, despite the blindness of economic rationality to environmental and cultural potentials. These cities are still shaping their urban fabric and could learn lessons from both scientific and traditional frameworks. This article proves to focus on spontaneous emergencies, understanding that in the emergence process we can find solutions to difficult problems, contribute to the visibility, and make the process scientifically approachable, regarding the relationship between culture, biome and city. Marabá was adopted as a case study, a city located in Eastern Amazon, where different rationalities met and produced different spatial arrangements and ways of use city and nature. Only a century old, the city has attracted more than 300,000 inhabitants and a variety of urban experiences ranging from vernacular urbanization, to a close relationship with nature. The city encompasses the promise of a modernist ideal city for the Amazon region that mistook the complex frontier context. Evidence comes from social cartography,
into the emergence in Amazonian cities

L.B. Pontes, A.C.D. Cardoso, T.V. Gomes, L.B. Bibas

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interviews, images and documented analysis, to present the loss processes (of yards, public spaces and conservation areas), and solutions that emerge spontaneously and attach culture, biome and city (the open spaces and vernacular interventions) and transcend city borders to highlight city and region, rural and urban as outdated dichotomies.

KEY WORDS

Emergence; Urbanization; Amazonian cities
INTRODUCTION

It is not easy to study something that is away of the science spotlights and seems not to fit in the established parameters by it. However, it is intriguing to realize that other ways of thinking about the city exist, but are not found in textbooks, but explode urbanity right before the eyes of those whose propose to look closely peripheral areas. How to explain to architects and planners that places arranged away from their orders could work (many times) better than those planned spaces inside architecture firms?

This is the curious case of Marabá, a city located in the Eastern Amazon, an economical frontier situation, where different rationalities meet and produce different spatial arrangements and ways of city use and nature. Only a century old, the city has attracted more than 300,000 inhabitants and a variety of urban experiences ranging from vernacular urbanization, in a close relationship with nature, to the promise of a modernist ideal city for Amazon that mistook the complex frontier context.

In this article, Marabá exemplifies so many other cases around the world where traditional way of life, that during centuries conciliated human settlements and nature, were outshone by urbanism and by world visions engendered in other contexts. Despite the voracity of the urban-industrial rationality established, it couldn’t homogenize the Amazonian city yet, giving place to a hybrid city, where different rationalities resist.

As bold as this affirmation may seem and beyond the megacities challenge, cities on economic frontier conditions as the Amazon’s, articulate potential for innovations in urban planning and design, as they are still shaping their urban fabric and could learn lessons both from scientific and traditional frameworks.

The hypothesis that this articles pursues is that it would be possible to identify clues from what emerges spontaneously to help the urban planning study adequate to real demands, understanding that in the emergence process we can find solutions to difficult problems and contribute to make visible and scientifically approachable the relationship between culture, biome and city. For that, this article is based on evidence from social cartography, interviews, images and documented analysis elaborated by the authors during the years of 2014 e 2015.

URBAN PLANNING AT A CROSSROAD: CHALLENGES OF THE URBANIZED WORLD

The world has been through great transformations in the last centuries. For the first time in history, most of the world’s population live in cities and the urbanized space, once compact, limited and with clear separations between countryside and city space, transformed itself into the opposed condition, open, diffused, sprawled, hard to delimit and with the gigantic list of new challenges. With the extended contemporary cities conditions, the role and operation field of the architect/urban planner also extends.

The last century wasn’t only the century of world urbanization, but also the century of the epistemological review that replaced the architect’s role and dismantle that unilateral vision about the urban space and the genius-architect myth. This was made capable of foresee and control ideal models for the city, opening space for professionals less enthused by the modern sparkle, and more worried
with the bonds between environmental, social and economic reality. There has never been so much gathered knowledge about cities, but despite the urban studies trajectory, as the world urbanizes, there is less agreement about what pathways the urban planning subject should take, it is definitely at a crossroad: how to plan and design a city? We no longer know how to plan better equipped cities, and what is worse, often the planning has been part of the problem. Criticism abound, but few are the most purposeful contributions. (Marshall, 2009).

Nonetheless, there’s no denying that in the beginning of this century concepts and strategies rose above seeking solutions for better cities, especially in northern countries: Smart Codes, Smart Cities, Green and Blue Layers, urban mobility, pedestrian valor, pollution reduction and recovery of degraded areas, in New York, Madrid, Copenhagen, etc. So, while the cities in rich countries are every day better places to live, in the countries which are the periphery of capital (and more: in the periphery of periphery) urban and environmental tensions and problems aggravate increasingly.

The rise of environmental concern and conscience in northern countries followed by institutionalization of tools to reconcile city and nature in Europe, US and Asia, is inspiring to places which have not met the urbanization trajectory imposed by modern industrial capitalist rationality. In many senses the correspondence between urbanization, public policies and planning (either to control or to foster growth) has created rather formal societies in which all spaces are under formal rules (environmental, productive or settlements related), where production was followed by struggles for better reproduction conditions and constitution of citizenship. In such context, the city might be space for production, but also of emancipatory practices, led towards fair social, environmental and economic development within such society. The broader view of global social division of labor shows that this trajectory does not occur in the same direction in economic peripheral contexts. Some places have assumed the position of natural resources suppliers and entered age of capitalism in a quite incomplete version, it was the case of the Brazilian Amazon.

THE AMAZON, AN URBANIZED FOREST

In any part of the world, most people have a pre-conceived image of the Amazon, but these images are frequently idealized by common sense – of a great uninhabited forest – which is inconsistent with reality. In this region, known to be the stage of environmental discussion, live 15.000.000 people, of which more than 70% live in cities (IBGE, 2011) more and more arid and excluding, where environmental concerns don’t arrive. There is no question, that one of the main researchers in the Amazon region the geographer Bertha Becker would call it an urbanized forest (Becker, 2013).

The Brazilian exploration was unequal over the territory, while the coast was, since the 18th century the Amazon region was treated as mundi frontier, under dispute of five nations, Illuminist Portuguese were very clever to organize the action of Portuguese Crown and Catholic Religious Orders to scatter human settlements across the territory and to make extractive activities possible on a large scale. Miscegenation between Portuguese and natives was carried out fixating families in small cities and villages which were located at river margins and strongly conditioned by site and water availability. They would grow alongside river margins until a natural barrier, and establish a grid that could keep all inhabitants and allow their movement easily on foot. Until the 1950s it was the description for massive majority of cities in Brazilian Amazon due to peculiar regional economic systems to exploit natural products that were commanded from metropolis and were able to prevent social stratification
on distant and isolated communities.

This reality was modified when local elites lost power to national elites, and the perception of land apart from its water, vegetation and people prevailed. Soil and subsoil were disputed, and logistics and new industrial activities (mining, agribusiness) were introduced in the territory changing massively rates of population growth and of urban expansion. Despite the formal nature of new activities, they were not accompanied by the same variables active during northern countries urbanization, and an important outcome was the aggravation of historic inequality patterns and of social and environmental unfairness. The urbanization process was much more of an impact of other actions than a planned and thoughtful process, as such, it has not benefited from research on how it happens, able to inform decision making about what would be more advisable to provide integration rather than exclusion. Most policies directed to the region are either agrarian or focused on natural resources preservation, despite most of its population is already living in cities.

Amid it all, there is a devaluation of traditional knowledge and a fast wiliness to erase traditional practices that were well succeeded for centuries. Needless to say that it is reproduced by professionals of urbanism, urban planning and related fields that are also assuming as target the acritical reproduction of massiveness practices created within metropolitan context and above all responsive to economic demands (fostered by exportation profits and expectation of growth of internal market).

INTO THE EMERGENCE IN MARABÁ

Beyond the pessimist point of views that describe a trajectory of exclusion and social-environmental degradation for the periphery, the adopted line for this article is that it still time to attempt other paths and perspectives. For Leff (2001), it’s these moments of crossroad that new paradigms capable of overcome the economical blind rationality emerges. In that direction, the Amazonian cities are still in process of formation present an important potential to learn (1) from the outline about cities gathered during centuries by science and (2) from the diversity of rationalities constituted along its historical formation [fig. 1].
SCIENTIFIC FRAMEWORK: THE EMERGENCE

Although the urban planning lives at a crossroad, the city is historically loaded with demands and solutions capable of irradiate worldviews and ways of life as well as providing rising possibilities of those powerless (JACOBS, 2000).

Since the epistemological revision occurred in the second half of the twentieth century, with the change in the architect's role, there were also new approaches in urban studies, in addition to social-based approaches (which were most recognized in Brazil), emerged those concerned with the city-space, such as urban design or landscape urbanism. Such studies make it clear that the shape of the city speaks a lot about it, which is like a book and its elements are like words that if we develop the necessary skills, we could read it (ARGAN, 1998).

It is important to notice that in Brazil the city-space studies have never had a lot of strength, even in academy and even less in the planning sphere (DEL RIO, 1990). Although the urban planning in Brazil was crystallized by the figure of the master plan which has little influence over the city shape (VILLAÇA, 2005), the city shape even if it not intentional is the product of decisions, is never accidental (BARNETT, 1982).

Of the various lines that study the city shape, this article focuses more closely on the evolutionary perspective of urban morphology. The evolutionary perspective focuses on the urban experience (formal or not) left over from history and reveals lessons often overlooked by critics, understanding the contemporary city is not the negation of modernist or something totally new and different from what was once, but the sum of all these experiences. This perspective also acknowledges that there is no order only what is formally planned and that there are other orders in the space that arises spontaneously.

Marshall (2009) points out as one of the lessons to be drawn from the experience of the modernist
paradigm is the realization that to avoid the production of monstrosities (see modernist utopias projects) or new demand to be created rather than solve existing ones, you need to carefully watch what arises spontaneously, to the author most of the solutions to the city does not depart from insights in architectural firms or urban planning departments, but the city, the streets and people. Still, it is important to emphasize that the emerging pattern is not intrinsically benign, like the ghettos formations show that patterns of segregation can also arise spontaneously.

The emerging effect is what arises from the interaction of individual action, has its own rules, but without a broad plan (blueprint). The local actors don’t create the emerging standard, it’s an indirect effect of individual actions, seen from a spatial or temporal zoom-out, which may not even be conscious about, though it extends to a large scale (MARSHALL, 2009).

What emerges can give clues about which paths the city can take. To track what emergent were meant to be across decades of change, of hybridization of a former traditional city, which aims to be modern and wealthy. In a territory that lived over dispute between settlers and newcomers, where original people had the knowledge to overcome adversities imposed by wilderness, and newcomers were interested in exploiting natural resources, in occupying land, the present time is full of possibilities.

It is impossible to speak of what emerges spontaneously in the Southern countries without talking about its hybrid condition. In Brazilian cities, the urban fabric is interlaced, produced formally by the government, the real estate market and the informal/traditional production of space. Illegality is functional, the result of a complicated modernity based on low wages that need covering for the cost of housing, incomplete and exclusionary modernization has created islands of "modernity" surrounded by degraded informal areas (MARICATO, 2000). Development bypasses the built environment (MARICATO, 2015), but only in specific parts of the cities, the classical production has given way to production.

Periphery condition is dubious, on the one hand there is the imposition of exogenous solutions and little support for innovation and anticipation of a bad prefixed future, on the other, its hybrid condition brings together the formal and the informal, several ways of seeing and living the world: the diversity of rationalities. No wonder that contemporary authors are devoting attention to informality (MOSTAFAVI & DOHERTY et al., 2014), because while the cities of the northern countries are increasingly generic (KOOLHAAS, 2013) and homogeneous, the informal production of space, in despite the structural problems, there are undeniable diversity of uses, types and attributes associated with spatial quality, difficult to achieve in the formal city.

In the present century it no longer fits the urban denial of the informal - 70% of urban areas in Latin America are produced informally (DAVIS, 2006) – neither embrace a biased position to deny the importance of planning and urban design, without it people would have to accept any fate. It is important to understand, accept and explore the hybrid condition, as well as scientifically make visible a reality that happens for so long in the urban peripheries and which it would be possible to withdraw many lessons. In this sense, the spectrum of possibilities to study emergencies in cities, this article focuses in study the successes and lessons left by the informal production of space that in opposition with the failings and detours of the formal production of urban space.
LESSON FROM MARABÁ

The city of Marabá, located in southeastern Pará, is an interesting case to study in what emerges. With an urban setting originally shaped by the physical site and by traditional knowledge, the city has been transformed since the 1970s in a multi-modal hub for the region, attracting large interventions by the federal government, new production logic of the urban space and a large contingent of migrants, resulting in a heterogeneous urban space and full of spontaneous interventions.

From a typical traditional riverside town this city has become multi-district city, today it consists of six urban districts [fig. 2], Marabá Pioneira, Cidade Nova, Nova Marabá, Distrito Industrial, São Felix and Morada Nova, occupied at different times. In fact, the first thing that visually emerges from the cartographic analysis of the city of Marabá is its multi-district configuration clearly marked and separated by natural elements, that can be easily compared with the classic city image as a continuous urban area and its surroundings by the countryside.

Rivers and waters in addition to representing cultural function, aesthetic and functional activities in the city of Marabá are intrinsically linked to the green areas which are still preserved in the city and surrounding areas helping the maintenance of more compact and dense districts, but also to the presence of informal settlements.

In general, the formal occupation happens in the consolidated part of each district, at higher altitudes, and informal/spontaneous occupations start in these limits, occupying risky areas. The Marabá Pioneira district has always been subject to periodic flooding but in other districts the areas of preservation and the railway area suffered informal occupation, also had the processes aggravated by
the occurrence of successive occupations, some motivated by need and others by profit potential, but always with omission by the public sector.

With no intention to classify each type of spontaneous occupation, this work aims only to point out that one cannot label all that isn’t formal in a large "package", considering there are many nuances of informality. Variables such as time of occupancy, speed of evolution, density and origin of the residents of the settlements may be key to understanding the nuances of spontaneous production of space along the movement of the city.

This article takes on, by a didactic strategy only, two kinds of spontaneous/informal occupations: one related to the original riverside town we call it vernacular, and one related to the latest formations we call informal. The vernacular space is the one with slower and gradual formation, with a helpful timing for city consolidation, when public services were scarce (piped water, public transport, etc.) and creative solutions were required in order to satisfy the whole population.

The nearest notion of informality which relates to precariousness and exclusion, only comes into existence after economic integration and logistics of the region to the rest of the country, in the 1970s. In this case, the informal is the improvised, with no resources, under rapid transformation, flexible and diverse, which shows the strength of the excluded and the impossibility of access to the formal city. The contemporary notion of informal is the deformation of vernacular spontaneous interventions, in the means that it does not recognize natural and culture elements as limits on land use, although it is possible to find similarities between vernacular and informal on formal urbanization practices.

Both vernacular or informal display qualities - such as diversity, flexibility, low cost interventions, solidarity, neighborhood networks, public space appropriation and creation of leisure spaces, human scale or coexistence with nature – that differ with the formal city, where under a vision that is supposed to be able to control people and nature, multiply the fences, the car's range, the dryness, the supremacy of private space and lack of quality for people.

Seeking to understand a little more about the lessons of the vernacular and informal that this work looked over the emergence in Marabá. The clarity of the boundaries between districts facilitates a comparative analysis. This article discusses the three main districts of the city, posing as an experience laboratory for urban studies: Marabá Pioneira of vernacular formation, Nova Marabá planned by the government; and Cidade Nova mainly produced by market strategies.

Production of the riverside area in the Amazon was based on a relationship of dialogue between man and nature, from the design of the building typologies to their distribution on site and the proximity to the river were thought to maintain this symbiosis between biome and human life.

The Marabá Pioneira district, which held until 1970 the entire population of Marabá, was born just over a hundred years on a piece of land at the confluence of major rivers in the region. The vernacular formation was based on the riverside way of life, in an asymmetrical radially converging to the meeting point of the rivers, this district had its urban shape extremely related to its topography, the human scale and the everyday life of a riverside village. When the economic and logistic integration of the city to the rest of the country in 1970s, the district benefited from the imposition of nature limited to expansion which provided, in addition to maintaining its original spatial structure, its consolidation and optimization of its scale and its urban fabric.
The spatial pattern of the district is more favorable to creation and maintenance of alive urban spaces that enhance social, recreational and leisure, activities, the contact with nature, the flow of people and uses adapted to pedestrian scale: small blocks, wooded streets and diversity of uses keep alive spaces during the day. Although over time the district has undergone many transformations and the riverside way of life is increasingly scarce, it is still possible to find forms of resistance of this rationality in the small backyards of Amazonian herbs, the generations of fishermen and their neighborly relations and appropriation of streets and public spaces.

Understanding that quality is related to the design, the formal production of space could be based on these molded shapes historically adapted to the climate, nature and local culture. However, prevails in recent formal occupation the esteem for exchange value over use value leading to homogenizing solutions that convert informal space in formal space without any mediation and processes comprehension.

**What emerges today in Marabá Pioneira** on one hand is evidence of the quality and potential of space produced spontaneously, before the modernization of parameters impose to the city and region; and on the other hand the loss of these virtues in an attempt of homogenization and burial of the riverside way of life, its spatial and environmental quality [fig.3].

![fig. 3](image_url) **Into the emergence in Marabá Pioneira District – Potential x Losses. Authors (2015).**

The Nova Marabá district, planned as the ideal city to Amazon, from the modernist basis, was proposed to modernize Marabá’s people and create neighborhood units surrounded by conservation areas of forest. Although the reports submitted to the creation of the new district recognized the qualities of the pioneer district, it admitted the “better city” transformation role. The river and the street that had a central role in traditional Marabá’s people life were wiped out in the plan that favored the car oriented matrix and the occupation of the highest quotas (altitude wise).

The result of this urban experiment was a space that has an unfavorable composition for the
pedestrian. The experience of people walking through its streets is unpleasant as the houses are walled/fenced, streets are "dead" and unsafe. The leisure areas are confined to private spaces (shopping center, play center, gyms) and the public areas are underused, inadequate or non-existent. Today this district, and the city as a whole, experiment a continuous process of homogenization, as example of the recent canals.

The answer to the inadequacy of the plan came into reality through abundant spontaneous changes. In this district the planned mesh, tree shaped was being cross-linked by informal interventions that also reframed rivers for recreation, the street as a space for people and made it clear how much the city is alive and that people do not behave as provided in pre-established plans, however, there are increasing attempts to resume informal occupation and return them to the heated real estate market form.

**What emerges today in Nova Marabá** is the evidence that people are not moldable or the assumption of one way of life is superior to another and that innovation not based on what exists lead to greater **losses**. Also, if on one hand the plan deformation can seem a failure, on the other it is here that we find the answers and the **potential** to think most suitable cities for its users [fig. 4].

<table>
<thead>
<tr>
<th>&quot;INFORMAL&quot;/POTENTIAL</th>
<th>&quot;FORMAL&quot;/LOSSES</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>1 - Approximation with the river.</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td>2 - Public space left by people that live in the area with furniture for people to use.</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>3 - &quot;Informal&quot; settlement tends to have more linear paths.</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td>4 - Attempt to make the &quot;formal&quot; public space more human, and usable.</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>5 - &quot;Informal&quot; settlements have greener areas, as opposed to the paved &quot;formal&quot; ones.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 - No regard with the weather comfort in the public space.</td>
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<td></td>
<td></td>
<td>7 - Canal with sewage being wasted down the stream, seems to be right, and a natural practice by the public power.</td>
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<td></td>
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<td>8 - The green areas that separate the car streets are placed with parking lots (car-oriented plan).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9 - Strategic drain points and roundabouts are being paved and turned into arid and uncomfortable public spaces.</td>
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<tr>
<td></td>
<td></td>
<td>10 - The government keep repeating the same mistakes from the past canaling streams and giving its back to nature elements instead of incorporate it to the city landscape.</td>
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The Cidade Nova district, emerged concurrently to the Nova Marabá district, but following market strategies aiming primarily profit. Today, despite having few open spaces, has some quality spaces, from the mix of uses to the possibilities of appropriation of the streets by people. It should be noticed that the highest rates of urbanity out of Marabá Pioneira are in this district. The district has a constant flow of people, making the space alive, safe, inviting and enjoyable. In this district it is common to see people moving around on foot or by bike because of the size of the blocks that allow those options.

One can also find vegetation still preserved in private lots (backyard), suggesting that the incentive to the preservation for compliance with environmental functions (water absorbing rainfall, preservation of vegetation mass) is still viable within the district. Informality in this district also reveals profound contradictions, although there is close relationship with nature, denied by market strategies: water
related places and yards are easily identified in the district, but also there are speculation and progressive occupation of lowland and reserved areas by the community and new invaders (rich and poor) for further resale and profit.

**What emerges today in the Cidade Nova district** is the evidence that it is possible to reconcile the modern way of life with the qualities of riverside life which in the hybrid condition points to the greatest potential and lower losses of urban and environmental quality, provided that there is proper government support [fig.5].

![fig. 5] Into the emergence in Cidade Nova District – Potential x Losses. Authors (2015).

From the analysis of what emerges in the three districts, it was possible to identify patterns that repeat across the city and possibly recur in other cities in similar context. Losses patterns and potential patterns were identified to reverse the loss. The pattern of loss is part of current practice and points out the future of the city if not established other ways of space production and therefore is shown in the foreground, then is presents the potential to achieve urban and environmental quality if new forms of space production were established.

The pattern of losses is the result of homogenization guided by economic rationality with a distorted vision of progress that is easily assimilated by managers, planners and even the population; all losses are accepted on behalf of an alleged progress that never comes fully and for all. The identified loss patterns are related to fading of nature and non-technical knowledge, understanding that both are extremely interconnected [fig.6].

The potential pattern is based on evidence found emerging in Marabá and shows that it is possible that for city to have a qualitative leap provided that the planners are able to understand and embrace the local potential based on their own circumstances and not on expectations of economic and cultural conditions of the northern countries.
The hybrid status of the city highlight the vernacular experience that shows how you can combine the city and nature and how this strategy ensures a low cost leisure, identity creation and development of laces. From the modernist and idealized experience the lesson within is that one cannot have full control over the city and its users, although spatially makes a contribution (the desire to preserve not doing so): the amount of free space that intersect the city (large green mid-spaces, roundabouts and drainage areas) and the possibility to create corridors between them. From the experience of the logic of the real estate market is the lesson within is that more important than the amount of free space is the ability to make them attractive and meet the different rationales and know how contribute in order to have diversity.

[fig. 6] Pattern of losses. Authors (2015).
The potential patterns are divided into two major groups, the non-erudite knowledge that encompasses not only the spontaneous interventions (vernacular or informal), but the voice of those people who experience the city, from the elderly to the children who deal daily with the space they inhabit; and the availability of free spaces that intersect the city as a whole and if thought systematically could meet cultural, environmental and social demands, paving the way for urban innovation for a city that could accommodate the diversity and quality of life [fig. 7].

IF on periphery cities the losses pattern are evident, beyond the narrative of loss, it is possible to glimpse and show other possible paths by identifying potentials, and it may be the first step to understanding that periphery cities can also be innovative.
CONCLUSIONS

Before the crossroads of urban planning context in the world, it is of great importance to adopt an instigating innovative posture, that goes beyond common sense and that can perceive existing challenges than those from the mega-cities of rich countries.

If the city is a text, the architect has to worry about the in-between lines, where seems less visible, but could come to anticipate the challenges to be faced, from which can emerge solutions.

In Amazonian cities the challenge is even greater, showing an existing potential as a challenge, getting to implement into reality is an even greater challenge, risking that in a short period of time all potential has already turned into loss. And as always, the losses are much more severe for the poor, who pay high cost for the inadequacy of formal production strategies of space, whether being relocated, or sometimes losing their leisure spaces and always treated as being excluded and marginalized.

In order not to repeat and reproduce the pattern of losses it is necessary that new ways of thinking of the cities in the Amazon region emerge while there is still glimpses of possibility at the crossroads changing the prefixed social exclusion and environmental degradation trajectory.

In this regard, it should be noted once again that the cities are still structuring and should seize this unique moment in the history in addition to the easy access to knowledge, technology and tools in search of better cities, but without losing sight of the endogenous knowledge, a valuable contribution to the understanding of our cities.

Marabá exemplifies the wealth of the vernacular, the inability to control the appropriation of the city, the inseparable relationship between city and nature and the certainty that even though pessimist views dominate the thought of researchers it is possible to trace potential and ways to better cities.

REFERENCES


SOCIAL RESILIENCE WITH RESPECT TO RAPID URBANISATION: A COMPARATIVE STUDY OF EMPLOYMENT GROUPS WITHIN PERI-URBAN CHENNAI

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ABSTRACT
The creation of Special Economic Zones (SEZ’s) and recent industrialisation in peri-urban Chennai has resulted in the rapid urbanisation of the region’s settlements. While this industrial and urban expansion appears to have enhanced the region’s economic development, little attention has been given to social resilience in of the local municipalities. This study principally aims to qualitatively assess the social resilience of three defined but occasionally coinciding employment groups: small business owners, agricultural labourers and small land owners. Semi-structured interviews focusing on coping, adaptive and transformative capacities were conducted on the selected employment groups within two municipalities of peri-urban Chennai, Molachur and Santhavelur. This allowed the social resilience of two different research locations to also be compared as a secondary research objective.

Results show that the social resilience of both land and business owners was comparatively high due to their financial capital and assets enhancing their ability to take advantage of the regions urbanisation and subsequently cope with and adapt to potential disturbances. Labourers, on the other hand, tended to have lower social resilience across all three capacities (coping, adaptive and transformative) when compared with business and land owners. The lower social resilience of the labourers reduced their ability to take advantage of the new economic, educational and employment opportunities offered by the urbanisation process and, in some instances, urbanisation was shown to actually worsened the labourers existing opportunities. Subsequently inequality between the labourers and the land and business owners is predicted to rise in a business as usual scenario; thereby reducing the social resilience of the community as a whole.

KEY WORDS
Social resilience; Coping capacity; Adaptive capacity; Transformative capacity; Urbanisation; Peri-urban
INTRODUCTION

The state of Tamil Nadu is rapidly transforming from an agrarian-based society to a society based on industrialisation in urban spaces. It is believed that this rapid economic development will enhance income potential, improve the state and national GDP, create technological advancements and strengthen trade partnerships (Tamil Nadu Industries Department 2012). Subsequently the developments are being supported by the National and Tamil Nadu State Government through the introduction of economic-development-friendly policies such as Special Economic Zones (SEZ’s) which are lowering tax and trade barriers\(^1\), encouraging industrialisation and resulting in faster urbanisation\(^3\).

Peri-urban Chennai is the most prominent industrial area in Tamil Nadu, comprising 80% of the manufacturing employment (Tamil Nadu Industries Department 2012). The international investment and industrialisation that has occurred within peri-urban Chennai during the last two decades has encouraged significant numbers of migrants resulting in the rapid urbanisation of the region’s municipalities.\(^4\) This is resulting in a substantial decrease in agricultural land space and an increasing number of small businesses (Census of India 2011). It is likely that this development trend will continue with large areas of land already bought by investors and scheduled for industrial and real-estate construction (Homm 2014). While this industrial expansion seems to have enhanced the short term economic prosperity of peri-urban Chennai, little attention has been given to the impacts of rapid urbanisation on the social resilience of the region’s villages and towns (Homm 2014).

SOCIAL RESILIENCE

Resilience terminology has emerged from an ecological perspective and was introduced by Holling (1973) as the “ability to absorb change and disturbance and still maintain the same relationships between populations and state variables”. Resilience is increasingly being incorporated into social and political science research. Social resilience theories focus on the ability of communities to not only maintain essential functioning but also learn and transform through disturbances\(^5\) - emphasising recovery, flexibility, and understanding as key components (Adger et al. 2007, Norris et. al., 2007). Social resilience is therefore vital for regions to manage or benefit from disturbance and consequently enhance the long-term economic, social and environmental progress of the villages, region and state (Norris et. al., 2007). Communities with low social resilience, on the other hand, have been shown to benefit less from economic growth and suffer more from increasing inequality than communities with higher resilience (Leys 2003, Bixby et al. 2006). Social resilience can be divided into three different capacities as explained by Keck & Sakdapolrak (2013). These capacities are: coping capacity, adaptive capacity and transformative capacity (Box).

\(^2\) Trade and tax exemptions include: exemption on export income for the first five years, 50% tax on export income for the next five years, exemption from State Sales Tax from Central Service Tax (Srivastava 2012)

\(^3\) Urbanisation is defined as the transformation of a society from a rural to this urban lifestyle (World Bank 2014). The Census of India defines urban areas as municipalities with: 5, 000 or more inhabitants, a density of more than 400 per square kilometre, pronounced urban characteristics and at least three quarters of the adult male population working in non-agricultural employment (Census of India 2011).

\(^5\) Disturbance in a social resilience context may refer to acute changes that occur within a short time frame (such as a natural disaster) or gradual changes that occur slowly over a longer time period (such as increasing population density) (Woolcock & Narayan, 2000).
Box: Dimensions of Social Resilience

**Coping capacity**
Coping capacity refers to the characteristics of communities to live with disturbance and overcome adversity (Keck & Sakdapolrak 2013, Putnam 1995, Sapirstein 2006). It is the short-term ability of a community to restore the present level of well-being and is the easiest of the three social resilience components to improve as there are no large scale systematic changes required (Keck & Sakdapolrak 2013). The primary aspects influencing coping capacity in respect to the social resilience framework that are analysed in this study include: informal networks, infrastructure accessibility and food security.

**Adaptive capacity**
Adaptive capacity refers to the ability of communities to learn from past experiences and take action in response to, or in anticipation of, future disturbances or threats (Homm 2014, Tompkins and Adger 2004). While coping capacity refers to short term re-active strategies post disturbance, adaptive capacity involves the implementation of pre-emptive strategies that enhances the community’s longer term ability to reduce the exposure to perturbations, losses and risks before the potential disturbance occurs (Bohle and Warner 2008, Keck & Sakdapolrak 2013). A community that is less able to adapt is more at risk of being negatively impacted by disturbances. Adaptive capacity is therefore evaluated based on: the ability of a community to anticipate future disturbances, the capacity of the community to adapt, and the pre-emptive responsiveness of a community to react to perceived threats.

**Transformative capacity**
Transformation aims to not only secure the well-being of a community but also to enhance it through the incorporation of progressive change and development (Keck & Sakdapolrak 2013). The progressive transformation of a community toward social resilience requires deep, systematic and radical changes which allow the alteration of feedback loops that have thus far maintained the status quo (Keck & Sakdapolrak 2013). Transformative capacity develops the present and future wellbeing of a community by increasing their ability to craft their own individual welfare in a social, political and environmental context (Keck & Sakdapolrak 2013, Sapirstein 2006). The major components influencing transformative capacity include: the level of participation, level of social inequality and communication.

**SOCIAL RESILIENCE WITHIN PERI-URBAN CHENNAI**
Peri-urban regions are a hybrid landscape which combine both rural and urban components (Ahluwalia et al. 2014). Peri-urban areas are associated with comparatively cheap land, willing workforce and inner-city proximity. Subsequently they have the potential to rapidly develop into metropolitan areas and have thus recently been seen as regions of huge potential by governments, investors and developers who take advantage of the relatively cheap land (Homm 2014 2013, Ahluwalia et al. 2014). Although urbanisation in peri-urban areas is encouraged by the state and national governments, a lack of autonomy in authority and governance within Indian peri-urban regions is a key issue in larger-scale planning. This is a primary cause of unsustainable growth and of resource depletion (Sridhar et al. 2015, Ahluwalia et al. 2014).

Where urban development policy does exist in India, it generally favours high-value real-estate state development and industrial investors with limited consideration for majority of poorer citizens (DuBois
et al. 2011). Consequently, social exclusion and inequality are a frequent by-product of urbanisation processes and are generally perpetuated by continued growth, disparities in economic / employment opportunities, rapid inflation and worsening environmental conditions (Kernaghan & da Silva 2014). Understanding social resilience within peri-urban Chennai will therefore allow for long-term economic, social and environmental advantages to be achieved (Keck & Sakdapolrak 2013, Brenson-Lazan 2003).

RESEARCH PROPOSITION

The primary purpose of this research was to identify the social resilience of three different employment groups within peri-urban Chennai: land owners, previous agricultural labourers and small business owners. The selected employment groups were analysed through qualitative semi-structured and narrative interviews within the two municipalities, Molachur and Santhavelur located within Sriperumbudur (a taluk6 within peri-urban Chennai).

Examining the social resilience of peri-urban employment groups within the two selected locations allowed the similarities and differences between the employment groups to be identified. Contrasting the social resilience between the two research locations, Santhavelur and Molachur, also allowed differences between the municipalities to be identified as a secondary research objective. It is hoped that outlining the importance of social resilience to the development of peri-urban Chennai will encourage policy makers to consider strategies and policies that cater specifically to strengthening the social resilience of each employment group and subsequently peri-urban Chennai as a whole.

After providing a brief background of the research sites and employment groups, the research methods are presented. The research results, based on the field, work are then presented under the categories of coping, adaptive and transformative capacities. The comparison of the three employment groups not only provides an understanding of the individual group resilience but also an indication of the resilience of the municipality as a whole. The results are then discussed and followed by a summary of the findings and recommendations for future research in the area.

REGIONAL SETTING SRIPERUMBUDUR

Sriperumbudur is a peri-urban area predominantly situated outside of the Chennai Metropolitan Area7 40km from the Port of Chennai. It has been dramatically altered due to industry-friendly economic policies, foreign investment and subsequent urbanisation within the last two decades (Homm 2014). Because Sriperumbudur is located within the state of Tamil Nadu it has been directly influenced by the Tamil Nadu state’s industry-friendly economic policies, foreign investment and subsequent urbanisation within the last two decades (Homm 2014).

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6 A subdivision of a larger district, usually compiled of several villages (Census of India 2011)
7 The Chennai Metropolitan Area refers to the region controlled by the Chennai Metropolitan Development Authority. This study will only focus on the Sriperumbudur region outside of the Chennai Metropolitan Area.
8 Such as agriculture due to declining cultivation conditions, higher production costs, land retailing incentives and increased opportunities.
Sriperumbudur’s rapid population increase, structural development, improved employment and education opportunities has resulted in many municipalities within the region shifting away from traditional livelihood practices. With continual expansion along the Chennai-Bangalore Industrial Corridor and much of the currently vacant land already owned by investors, it is speculated that further industrialisation will continue to spur on the urbanisation process (Homm 2014).

SELECTED RESEARCH SITES: MOLACHUR AND SANTHAVELUR
Both research sites were located within the Sriperumbudur Taluk, outside of Chennai Metropolitan Area. The centre of each selected research sites are located within 2 km of each other and are therefore comparatively equal distance from the recently established industries (fig. 1). Both sites is located within the Sriperumbudur Taluk in peri-urban Chennai, approximately 40km from Chennai (fig. 2).

[fig. 1] Molachur and Santhavelur relative locations to each other. Santhavelur & Molachur (2015)

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9 note alternative spellings for locations: Molasur and Santhavellore respectively
Molachur was given the title of Census Town\(^{10}\) during the 2011 census. From 2001 to 2011 Molachur increased in population from 6,149 in 2001 to 8,887 with a total of 2,206 houses connected to central water and sanitation services (Census of India 2011). Of the 4,004 individuals engaged in employment or business only 33 individuals are classified as Cultivators\(^{11}\). There are 43 individuals within Molachur are registered as agricultural labourers\(^{12}\) (Census of India 2011).

Santhavelur is officially classified as a village with census data showing that it has increased in population from 2,788 to 4,817 with a total of 1,190 houses being connected to central water and sanitation services (Census of India 2011). While Santhavelur is officially classified as a rural area, it has the potential to become a Census Town in the near future. A much larger proportion of the Santhavelur population are working within the agricultural sector compared with Molachur. There are 136 individuals classified as cultivators and 326 are registered as agricultural labourers (Census of India 2011).

**METHODS AND RESEARCH DESIGN**

**THE CASE FOR QUALITATIVE RESEARCH**

The research undertaken focused heavily on a qualitative approach with secondary quantitative data only used to select the research sites and to provide background information. While quantitative indicators were found to be prevalent in previous resilience studies\(^{13}\); incomplete data, wide-ranging assumptions and lack of interaction between indicators was seen to be problematic.

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\(^{10}\) A Census Town required at least 5,000 residents, a density of 400 people per km\(^2\) and three quarters of the male working population obtaining their income from non-agricultural employment.

\(^{11}\) Earning their income from owning or co-owning agricultural land.

\(^{12}\) Individuals paid for labour by the landowner.
It was therefore hoped that qualitative research would be able to provide the depth necessary to gain a greater understanding of the community’s social resilience. It is also hoped that the use of the comparatively unestablished social resilience framework will aid in the further development of indicators and the operationalisation of concept.

SELECTION OF RESEARCH SITES
Sriperumbudur was selected as a research site due to its peri-urban status, external location to the Chennai Metropolitan Boarder and the recent establishment of industries which encouraged rapid urbanisation. The selection of the research municipalities was based on an explorative research phase which included an extensive literature review and preliminary field research. This involved a review of 2001 and 2011 employment and demographic census data from various municipalities within Sriperumbudur and field research to determine rapid structural changes.

SELECTION OF ACTOR GROUPS AND PARTICIPANTS
An initial review of literature on social resilience and peri-urban regions in India provided an indication of actor groups who would be most: susceptible to positive / negative peri-urban changes and divergent in their social resilience status. This resulted in the selection of three distinct but occasionally overlapping employment groups: small business owners, agricultural land owners and labourers. Municipality presidents, religious leaders and overarching government offices were also interviewed during the research to gain a broader understanding of the urbanisation process in the region.

The selection of interview participants within the actor groups was primarily based on their accessibility. Interviews with municipality residents were selected by walking through each location and conversing with the local residents. Snowball participant selection was also used (particularly within the higher profile interviewees) with both prompted and spontaneous recommendations occurring during numerous interviews.

DATA COLLECTION: SEMI-STRUCTURED INTERVIEWS
Semi-structured interviews were used as a primary research method because they allow the interviewee to freely describe their situation while ensuring a set of questions relating to social resilience were followed. Each interview was conducted within a one hour time limit and often interviews were less than half of this. This ensured questions remained targeted to the coping, adaptive and transformative capacities and assisted in keeping the interviewer, interviewee and translator focused. If the researcher believed more information could be obtained after one hour another interview was scheduled for the next field day. Often the semi-structured interviews involved a narrative component which enabled the participant to provide greater detail.

FOCUS GROUP DISCUSSIONS
Occasionally an individual interview would develop into a focus group scenario where the interviewee’s friends, colleagues or family members joined in the discussion. This was generally perceived as beneficial as it allowed each participant to expand on the other’s ideas and enabled an overall understanding to be gained regarding the topics discussed. Often the participants forming the focus group were within the same employment category which allowed the general perception of particular group to be understood without confusion. It is believed that the presence of multiple people increased the confidence of the participants involved, thereby increasing the contribution of shier members and resulting in answers being provided that may have otherwise remained hidden.

TRANSLATION
The majority of the interviews conducted were in Tamil with the aid of a translator from the Indian Institute of Technology Madras. Questions were asked first by the researcher before being translated into Tamil for the interview participant. The answer was then translated back into English so a follow-up question could be asked. Experienced translators were given the opportunity to ask their own follow-up questions in Tamil before translating if they believed it would aid the flow of the interview.

DATA ANALYSIS: TRANSCRIPTION
Key interviews selected for transcription were established on the relevance of the interviewee and the answers provided during the interview by the translator. The interviews were completely translated and transcribed using a team of four Tamil transcribers employed from the Indian Institute of Technology Madras. Each transcriber was given a strict guideline to follow to increase uniformity and aid in the transcription process.

DATA ANALYSIS: CODING
All transcribed interviews were coded using MAXQDA 11 and using codes (categories) founded on the social resilience framework and coping, adaptive and transformative capacities (described in Box). Inductive coding was also used to identify patterns within the employment groups.

SUMMARY OF THE KEY RESULTS
Due to limited space this section was unable to show all of the results regarding the social resilience of the three employment groups in Santhavelur and Molachur. As a result only some of the most important findings are outlined below.

COPING CAPACITY
INFORMAL NETWORKS
Informal networks consist of relationships developed though employment, family, education and neighbourhood settings. Informal networks were found to support individuals and communities (particularly during adversities) and are subsequently one of the more important aspects of the ability to cope with disturbance. Land owners were found to have strong internal networks through the cooperative methods of agriculture commonly used, including unfenced properties that allow machinery and livestock to move freely between the plots. This, along with the frequent land owner meetings, enhanced reciprocity within the group as well as their ability to communicate and homogenisation opinions and ideas, thereby increasing their influence in municipality decisions. Many of the land owners interviewed also stressed the importance of these meetings in maintaining harmonious relationships between the land owners through the settlement of issues that may have
otherwise become perpetual disagreements. Land owner were also found to have relatively strong networks with other employment groups due to frequent interactions with: labourers\textsuperscript{14}, business owners\textsuperscript{15} and influential investors or members of the local government\textsuperscript{16}.

![Image](image_url)

**[fig. 4]** An area of remaining agricultural land in Santhavelur. *Photographer: Lauren Pegus*

Business owners in Santhavelur and Molachur also had the opportunity to participate in collective meetings that revolved around sharing business strategies, communicating new business opportunities and subsequently assisted in reciprocity between business owners. However, particular forms of employment were found to have stronger networks than others. This was demonstrated through the level of interaction between the different business owners and the subsequent adaptation and success of the business. Saree manufactures in Santhavelur, for instance, portrayed a high level interaction having moved from the individual production of sarees to collective production which reduced competition and allowed a set price to be received, “*We don’t sell them. [The Coordinator] gives us the raw material. Then it goes to Sowacarpet, directly to Madras.*” (Saree Manufacturer, Santhavelur). While the saree manufacturing business is arguably dwindling, it would potentially be non-existent in the area without this network. Other business sectors, such as the consulting sector, showed less integration and network capacity. Both consultants interviewed stated that they infrequently talked with other consultants in the area and, although they acknowledged the existence of monthly meetings for business owners, they had

\textsuperscript{14} Land owners were found to frequently supplement the income of the labourers who worked for them with agricultural produce, thereby increasing the reciprocity between the two groups.

\textsuperscript{15} Many land owners had the ability to sell portions of their and invest in businesses resulting in some employment group overlap and subsequent communication between these two employment groups.

\textsuperscript{16} The increased price of land had resulted in the increased interest of real-estate and government officials in the employment group.
not attended one before. This is potentially due to the success of both consultants making the meetings redundant. The meetings could, however, improve the ability of the consultants to cope in times of financial stress or after a disturbance occurs.

Labours, unlike business and land owners, did not have an employment group meeting institutionalised to settle disputes or provide a platform for increased reciprocity. However, bonding within the labourer group was observed in the ability of labourers to share work offered through the 100 days of Labour Scheme.

ADAPTIVE CAPACITY

Adaptive capacity refers to the ability of individuals and communities to pre-emptively adjusted to future challenges. The major threats perceived by people living in both Molachur and Santhavelur were: the lack of rain, food security, increasing pollution levels, the rapidly increasing population due to migrants and the loss of agricultural land due to further urbanisation. There were significant differences in the frequency at which anticipated disturbances were mentioned and in the perceived capabilities to manage those disturbances between the different the employment groups.

BARRIERS TO ADAPTATION

Although the ability to anticipate future disturbances was found to be an important aspect of adaptive capacity, the ability of the individual to pre-emptively respond to this perceived need was dictated by various barriers to adaptation.

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17 The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) scheme guarantees 100 days of paid labour for unskilled workers in rural India and is therefore commonly referred to as the 100 Days of Labour Scheme.
It became apparent during the interviews that labourers had far more barriers to adaptation than land or business owners. Both land and business owners had financial capital or assets that they were able to liquidate in times of stress. This enabled business and land owners to pre-emptively respond to anticipated disturbances and take calculated risks that allowed them to improve their current form of employment and subsequent quality of life. Land and business owners with greater financial security were also able to provide their children with education at higher levels at more prestigious institutes. This increased the likelihood of children entering the workforce in a higher paying position and subsequently perpetuated financial security that enables pre-emptive adjustments and adaptive risks to be taken.

Labourers, on the other hand, generally perceived the need to pre-emptively adapt and were willing to change their current life-style and form of employment, “If a company offered a job, I would take.” (Labourer, Santhavelur). However, the lack of financial capacity resulted in them being unable to invest in a new business or alter their current situation. Furthermore, a lack of family income often resulted in the children of labourers having to finish their high school education early, diminishing their opportunities of obtaining a high paid job and perpetuating the adaptation barriers, “There are kids who are capable but are not able to study because of money” (Labourer, Santhavelur).

TRANSFORMATIVE CAPACITY

Transformative capacity refers to the ability of people within the community to craft sets of institutions that reflect their individual welfare and the needs of the community as a whole. The ability of an individual or group to participate in the community decision making process is therefore an important aspect of transformative capacity.

PARTICIPATION THROUGH DECISION-MAKING

Labourers were the employment group who felt the most disillusioned with their ability to participate in decision-making throughout the urbanisation process. Frustration at the apathy shown by the authorities regarding their difficulties was also common, “For any problem, nobody, no collector will come. No leader will come. No one will ask for problems from the common people.” (Labourer, Santhavelur). This indicates the labourer’s believe that they are unable to voice their opinion and shows a sense of powerlessness to change their current situation. There were, however, indications that the labourers had previously attempted to participate in steering the urbanisation process but with little success, “We have even seen very high authorities ... Even when we went to the government directly it has not done anything for us.” (Labourer, Santhavelur).

Although some business owners felt they were unable to influence decisions impacting the rapidly changing conditions, their remarks were still more optimistic than those of the labourers, “Life changes. It keeps evolving. We can't predict that... Life moves on.” (Business owner, Santhavelur). Agricultural land owners were split with some feeling that they were able to dictate the selling on land while others felt forced by interest groups, other land owners or investors. Agricultural land owners who had invested in small businesses often felt their status and subsequent ability to participate in community decisions had increased since selling their land. Other land owners, however, felt that there were fewer opportunities to be involved in the decision-making process, “After selling, nothing can be done. We
DIFFERENCES BETWEEN SANTHAVELUR AND MOLACHUR

The social resilience of business and land owners within Molachur appeared to be higher than the social resilience within Santhavelur. Business owners displayed more willingness to adapt their businesses as well as demonstrating greater entrepreneurship by starting new businesses, for example, consulting or real-estate companies), “There are a lot of new business opportunities for people now” (Business Consultant, Molachur). The majority of businesses within Santhavelur, on the other hand, had reportedly remained unchanged throughout the last 10-15 years which demonstrated lower adaptive capacity. A number of businesses within Santhavelur, such as the local bakery, had closed since the urbanisation began. Others, such as saree makers, are earning less than before, “Before 10 years, there would be huge profits. Now we just make Rs 150 a day.” (Saree Manufacturer, Santhavelur). This demonstrates a comparatively low adaptive and coping capacity compared with the businesses that had reportedly flourished due to the urbanisation in Molachur. The transformative capacity of land and business owners appeared to be similar in both locations. However, the ability of residents within Santhavelur to participate in the decision making process appeared to be slightly higher due to the relatively small population.

Labourers within both Santhavelur and Molachur had comparatively similar social resilience. Despite effective informal networks, neither group had the finance nor assets allowing them to cope or preemptively adapt to disturbances sufficiently. For many labourers the affordability of food was, instead, the primary concern, “The lands we used to work were sold to the companies. So it has become difficult
to get ourselves food.” (labourer, Santhavelur). Both locations also lacked a platform for labourers to collaborate on key issues which resulted in lower cohesion and participation in their respective municipality’s decision-making. The only noticeable difference between the two municipalities was the greater amount of agricultural land and subsequent agricultural employment within Santhavelur. This enhanced the networks between the labourers and the land owners resulting in Santhavelur’s labour group having a slightly high coping capacity.

It was observed that the higher social resilience of business and land owners in Molachur is allowing them to take greater advantage of urbanisation through increased finance, education and employment opportunities. This is likely to generate, and continue to perpetuate, higher social resilience compared with marginalised groups such as labourers. The lower resilience of the labourers is also likely to be perpetuated as it is preventing their ability to access the same educational, employment and subsequent financial benefits. The growing divergence in the social resilience and opportunities presented to land and business owners compared with the labourers is likely to perpetuate inequality within both locations. However, this inequality is more likely to be prevalent in Molachur, where the differences between the employment group’s opportunities are more extreme. Inequality negatively impacts social resilience within all three capacities (coping, adaptive and transformative) by: increasing competition, reducing the cohesion between groups and minimising participation of marginalised individuals. Therefore while Molachur’s land and business owners were found to have a greater social resilience in comparison to Santhavelur, the overall resilience of the municipality was arguable less.

CONCLUSION

The social resilience of both land and business owners was relatively high levels compared with the social resilience of the labourers. The financial capital or assets owned by business and land owners provided them with a greater flexibility and subsequently a better ability to cope with and adapt to potential disturbances. Labourers tended to have lower social resilience across all three capacities (coping, adaptive and transformative) when compared with business and land owners. The lower social resilience of the labourers reduced their ability to take advantage of the new economic, educational and employment opportunities offered by the urbanisation process and, in some instances, actually worsened the labourers existing opportunities due to the diminishing agricultural land space.

The high social resilience of land and business owners in conjunction with their ability to take advantage of the urban opportunities is supporting their continued progress while the low social resilience of the labourers is perpetuating their inability to take advantage of such opportunities. This was particularly prominent in Molachur. Subsequently inequality between the labourers and the land and business owners is growing. This inequality has the potential to further reduce the productivity of informal networks, participation and communication within the entire community thereby lowering the overall social resilience of the municipalities.

Limitations

- This research was primarily limited by the broad and relatively unexplored nature of the social resilience concept. While the key aspects of coping, adaptive and transformative capacities were selected, others were unable to be explored due to time constraints. Time constraints also limited the depth of the study.
• The dominance of the majority of male, and the hesitancy of female, interviewees is also viewed as a constraint. Every interview conducted with both a male and a female resulted in the female being hesitant to contribute, even when specifically addressed. However, the interviews conducted with an individual female or group of females were generally very insightful. This could have resulted in a skewed perception of the different employment groups or community as a whole.

• The age of the respondent may have also had a large impact on their response and subsequently the analysis of their employment group’s social resilience.

**FUTURE RESEARCH RECOMMENDATIONS**

• While this study outlines the differences in social resilience between employment groups, a greater understanding about the methods of improving social resilience is required. This includes research into the success of various government programs (such as the 100 Days of Labour Scheme) and the effectiveness of local agendas and NGO’s.

• A greater understanding about how gender and age impact social resilience would assist in determining which demographics are most vulnerable to poor social resilience.

• This research discusses the importance of informal networks in strengthening coping capacity but further study into the influence of migrant workers on the community’s social resilience and the social resilience of migrants within the community is recommended.

• This study also lacked in research regarding the social resilience of labourers who had successfully entered the industrial sector. It was clear through the interviews with land and business owners that some labourers had obtained unskilled employment jobs within the industries. However, none of the labourers working for the industries were present during the field research due to the majority of the interviewees occurring during work hours.

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PERI-URBAN DYNAMICS AND SUSTAINABILITY IN CHENNAI:
THE CASE OF SRIPERUMBUDUR

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ABSTRACT
Purpose of this paper is to present preliminary results of an interdisciplinary research project at the Indo-German Center for Sustainability (IGCS) funded by the Indian Government whose broader goal is to develop a clearer understanding of current patterns of growth in peri-urban areas in South Asia and to set up a Global Technology Watch for Sustainable Urban Habitat. Today peri-urban areas are increasingly being recognized as a separate socio-spatial configuration with distinct challenges for sustainability. The literature about India in this field is growing constantly, covering a range of topics from governance, social and political context, spatial-geographic implications, economics, to infrastructure provision and the environment. Currently, the project explores the dynamics in the peri-urban region of Sriperumbudur, on the outskirts of Chennai. The region has witnessed rapid industrial development, spurred by economic policies that aim on attracting foreign investment to the state of Tamil Nadu, resulting in rapidly shifting patterns of production. Poor capacity for governing the areas beyond metropolitan Chennai has resulted in significant pressure on land, resources, infrastructure, social structures and agricultural production.
The first phase of the project develops a preliminary set of heuristics for understanding peri-urban dynamics in Sripurumbudur. For this purpose, a multi-disciplinary mixed methods approach has been developed. In the beginning, we outline processes and causes of peri-urbanisation in India and Chennai, including a brief literature review, urbanisation trends and data as well as spatial dynamics of the region. This is then related to the functioning of the existing planning framework and institutions. In the third section, two studies zoom into local contexts of socio-economic transformation and the management of water resources. The conclusion relates the findings to the larger debates on urbanisation in India and sketches a way forward.

KEY WORDS
Peri-urbanisation; India; urban growth; climate change; sustainability
INTRODUCTION

The project described in this paper contributes to the Indian Government’s National Mission on Strategic Knowledge on Climate Change under the National Action Plan on Climate Change (NAPCC 2008). It aims to address ‘enhanced energy efficiency’, sustainable habitat, and the ‘water mission’ objectives in fast growing peri-urban areas (tier-II cities) in India. The broader goal of the project is to develop a clearer understanding of current patterns of growth in peri-urban areas in South Asia and to set up a ‘Global Technology Watch for Sustainable Urban Habitat’ with the peri-urban being the focus of analysis. The study examines an archetypal region, Sriperumbudur, on the outskirts of Chennai and investigates alternative integrated development scenarios in the context of climate change using various modelling frameworks to explore economic, land-use development and governance alternatives and their implications for energy, waste and water in the region. Currently, this is a one-year project to initiate a more comprehensive research agenda on urban development and climate change adaptation/mitigation lead by Indo-German Center for Sustainability (IGCS). Since it was launched only in March 2015, it is still in the initial stage, hence we present work in progress.

After prescribing an overview of the research design in the first section, we outline processes and causes of peri-urbanisation in India and Chennai. This will then be related to the current functioning of the existing planning framework and institutions. In the third section, two in depth studies are used to zoom into local contexts of socio-economic transformation and the management of water resources. The conclusion relates the findings to the larger debates on urbanisation in India and sketches a way forward.

RESEARCH DESIGN AND METHODOLOGY

The project is carried out by following a set of three tasks that feed into exploratory research, which is emphasized upon given the complexity and broad scope of the challenge of understanding peri-urban dynamics in the context of climate change:

1. Develop a preliminary set of heuristics for understanding peri-urban dynamics, using current conditions in Sriperumbudur as a test case. One part of this consists of preparing baseline GIS of Sriperumbudur Taluk in Kanchipuram District and the hydrological sub-basin around Chembarambakkam Lake, and the subsequent addition of relevant layers such as broad land-classification features, hydrology and related climate risks, existing infrastructure and demographic information. The second part focuses on developing a schematic showing material and energy flows, waste generation, hydrological balance, governance and institutional relations, and thereby, develop a conceptual map of the sustainability challenges to be further investigated. Fig. 1 shows a preliminary schematic which will be refined and further represented in terms of its sub-systems.

2. Build a stakeholder driven visioning process to identify a portfolio of risk-minimized technology (including infrastructure choice, water/energy/waste management options) and governance/institution choices for alternative developmental futures for Sriperumbudur. This is done through multiple visioning exercises through workshops with all relevant stakeholders so that each stage of the scenario development process
has strong validation from ground-level feedback.

3. Communication, Capacity Building and Strategic Knowledge development - the stakeholder driven vision and validation workshops are also aimed at communication and sharing of strategic knowledge among key stakeholders. This is done by identifying a set of stakeholder representatives from the region (local and state government, small and large industry, key CBOs/NGOs) and researchers, stakeholder workshop describing the project and presenting a draft ‘Business-as-usual’ (BAU) scenario and its implications. This is followed by a visioning exercise for a first cut at Policy Reform and Social Transformation scenarios. In a final conference (which will include a press conference) the ‘technology watch’ features of this project will be outlined, identifying lessons learned for making appropriate interventions for sustainable urban habitat in peri-urban regions.

It is important to point out that the research design goes far beyond a knowledge generating project, but envisages to experiment and test an action oriented approach of knowledge management for climate change, policy-informing research that includes the generation of scenarios, an approach to policy making relatively new in the Indian context. Therefore, the study objective is as important as the methodology. Being explorative, it is also open ended, for it ultimately seeks to build an ecology of peri-urban research in India and South Asia. Already several research projects are being carried out by IIT M faculty from various departments (e.g. Humanities and Social Sciences, Civil Engineering) on various topics (water management, labour and migration) in the same region. With similar spirit, setting up an interactive Research Wiki that presents research findings as an ongoing activity is in process that can be regularly updated and amended. Moreover, capacity is being built at IIT Madras in
interdisciplinary sustainability research by involving master students from various departments who will be the next generation of researchers and potential decision-makers. While it is one of the project’s objectives to conduct broad based, multi/interdisciplinary research that covers a wide range of topics via surveys and mapping exercises to create baseline data, we follow an incremental approach of identifying topics for specific, in-depth studies. Many of these are carried out by German visiting researchers at masters and postdoc level from various universities in Germany, thus allowing for cross-cultural learning and exchange; some of these studies are presented at this conference as well.

PERI-URBANISATION IN INDIA AND CHENNAI

Until quite recently, much of the research on climate change adaptation has focussed either on cities and their adaptive capacity (infrastructure, disaster preparedness, etc.) or on rural areas identified as specifically vulnerable, e.g. drought or flood-prone regions. Peri-urban areas bring up new issues that move across disciplinary but also governance and institutional boundaries, and as such define a complex environment in their own right. The peri-urban, which used to be treated as a transitional zone between the urban and rural in rapidly developing areas, is now being recognised as a separate socio-spatial configuration with distinct challenges of sustainability (Adell 1999; Simon 2008). The literature in this field about India is growing constantly, covering a range of topics from governance (Dupont 2007), social and political context (Arabindoo 2009), geographic implications (Oliveau 2005), economics (World Bank 2013), to infrastructure provision and the environment (Shaw 2005).

In South Asia, peri-urban areas are also regions where access to services (water, energy, transport, housing) is becoming increasingly fragmented as result of the development of gated communities and Special Economic Zones (SEZs), along with resource constraints and the consolidation of power – all conveyed largely in terms of social and political drivers rather than only physical ones. Resilience, accordingly, needs to be characterized more broadly as well, involving normative elements of social and environmental justice in the context of ecological disruption. Rapid development, shifting patterns of production and poor capacity for governing the areas beyond urban boundaries have resulted in significant pressure on land, resources, infrastructure, social structures and the economy (Ravindra 2010). In India, these areas are typically the sites of fastest growth outside metros and the larger Tier-II cities (Vishwanath 2013). In the face of climate change, it has become imperative to assess and steer the development process in these regions in order to ensure their sustainability and resilience.

Though still relatively low, the level of urbanisation in India has experienced an ever-increasing urban growth over the years (Taubenböck et al. 2009; Gans et al. 2009). Various reasons can be attributed to such growth as the natural increase of population, rural to urban migration, reclassification of rural settlements into urban, and changes in boundaries of existing urban settlements. The Census of 2011 reveals that for the first time the decadal increase in the total urban population slightly surpassed with 91.8 million that of the rural population (91.5 million).

1 Primarily by way of using IGCS scholarships from DAAD.
The total urban population in 2011 was at 377 million with a decadal growth rate of 31.8% as against 17.6% in 2001. Remarkable is the increase in the number of towns in 2011. The reason for this increase is due to the population of many urban outgrowths or previously suburbanized areas that now fit into the criteria of being an urban centre, as in the case of many villages in Sriperumbudur.

[Fig. 2] Towns and Villages in Sriperumbudur Taluk with decadal growth rates beyond 100% (red star: Census Towns; orange square: villages) (source: authors)

As one of the six most urbanized states with urban populations much higher than the national average of 31.1%, Tamil Nadu is undergoing rapid urbanisation. The Census 2011 data reports that 48.45% urban population (34.90 million) for Tamil Nadu living in 1097 cities and towns. Chennai city hosts a population of 4.68 million, while Chennai urban agglomeration is the fourth largest metropolis in India with 8.69 million inhabitants. In spite of this, the decadal growth rate in TN significantly dropped from 44.06% in 2001 to 27.16% in 2011.

REGIONAL CONTEXT: SPATIAL DYNAMICS OF URBAN GROWTH IN CHENNAI
Till date, a few studies have been conducted about various aspects of Sriperumbudur, mostly in relation to the establishment of Special Economic Zones (SEZs) in the mid-1990s. The World Bank Report 2009 selected Sriperumbudur as a successful case study to support its argument of agglomeration economics, arguing that the “market forces of agglomeration, migration and
specialization” produce rapid economic growth in cities. Other scholars have largely refuted such claims especially highlighting shortcomings in social benefits like employment for local population and the highly subsidized nature of investments (Dutta 2009)\(^2\). Similarly, Homm (2012, 2014), whose study is probably the most comprehensive on this region so far, applies a more carefully chosen and complex analytical framework sensitive to local contexts. Homm provides a detailed critique of the simplistic New Economic Geography of the World Bank. It is against this backdrop that Sriperumbudur was chosen to add yet another dimension to the investigation by taking into account in a pronounced way, future pathways, opportunities and challenges of climate change adaptation and sustainable development. This critical perspective on (peri-)urbanisation is situated in a body of literature on globalisation and cities in the South which increasingly works through the disparities, diversities and distinctions of these processes by reframing debates primarily rooted in Western scholarship and presuppositions of globalisation (McKinnen 2011, Shatkin 2007).

The selected peri-urban study area is initially defined by administrative boundaries, constituting one of the ten taluks in Kancheepuram district of Tamil Nadu, which covers 371.94 sq.kms (of 4432 sq.kms of the district) and contains a population of 316,918 persons as per 2011 census (8% of the district). Since the peri-urban is characterised by the absence of clear boundaries, the region as a spatial unit is flexibly applied to the context of analysis and action. For instance in relation to the water basin or the institutional setting and planning areas there are multiple overlaps, interfaces and levels which define peri-urban Sriperumbudur in various ways beyond the taluk boundaries.

The city of Chennai has expanded enormously especially since post-independence (Nagaraj et al. 1982). As a result of this continuous growth and agglomeration of settlements the city’s boundaries were expanded in 2011, enlarging Chennai Municipal Corporation area from 179 sqkms to 430 sqkms\(^3\). This fact requires shifting focus from the city to the urban agglomeration of Chennai and beyond. The aim here is to analyse the spatial temporal development of the region of Chennai, including the metropolitan area and the peri-urban regions around the city. In order to establish a sustainable development and planning strategy it is essential to understand the spatial dynamics in the region. A land-use classification was conducted for the years 1989, 2001, 2009 and 2014 (Murawski 2014). Fig. 2 summarizes the growth of the urban agglomeration between 1988 and 2014. Clearly visible is the emerging sprawl into the region and a pattern of ribbon development, especially in the most recent picture of 2014. Fig. 2 illustrates the land-use change from rural to urban by combining the different land-use classes, particularly ‘High-density Urban areas’ and ‘Low-density Urban areas’ to ‘urban land-use’. The detailed classification also shows high variations in the different vegetation classes (Forest, Grassland, Vital Vegetation and Aquatic Vegetation). These vegetation classes were combined as rural areas including also ‘Open Land’ and ‘Bare Soil’.

\(^2\) Meanwhile the Nokia plant was even shut down in 2014 (The Hindu, “Nokia to Shut Down Its Chennai Factory from Nov. 1”)

\(^3\) Note: hence the population figure of 4.68 million given above is for the old city boundaries, as the expansion coincided with the publication of Census 2011. It is estimated that more than 6 million people now live in Chennai City.
The clearly visible ribbons are highways designated as industrial development corridors:

1. The Old Mahabalipuram Road (OMR) is the IT corridor,
2. The Grand Southern Trunk Road (GST) is the logistics and industries corridor, and
3. The Sriperumbudur Road (NH 4) is the electronic hardware corridor or Industrial Corridor of Excellence.

By virtue of above outlined processes, Sriperumbudur Town Panchayat has been transformed from a village into an industrial hub in the past 20 years. The State Industrial Promotion Corporation of Tamil Nadu Ltd (SIPCOT) has played a major role in this transformation by developing three industrial parks at Irungattukottai, Sriperumbudur and Oragadam (fig. 4).

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4 State Industries Promotion Corporation of Tamilnadu Ltd (SIPCOT) was established in the year 1971 to develop industrial growth in Tamilnadu. SIPCOT has so far developed 20 Industrial Complexes in 12 districts and Six Sector Specific Special Economic Zones (SEZs) across Tamil Nadu.
In contrast to this accelerated industrial growth, “Sriperumbudur [town] has demonstrated only a lukewarm profile in terms of quality of life and social development” (Mott McDonald 2012: 7). Apparently, Chennai metropolitan region is the most important location of the Indian and foreign automobile industry. Since Ford Motor Co., Hyundai Motor Co., Nissan Motor Co., Renault SA, Daimler AG and BMW AG are based in the Chennai region, some call it the ‘Detroit of India’ (The Wall Street Journal 2010). Because the industrialisation process in Chennai started relatively late, most of the industrial estates are located outside the city in the suburban/peri-urban region, which today may be seen as a positive situation. Compared to Kolkata, Delhi or Mumbai, Chennai is not as much overpopulated and affected by mixed land-use (Wamser 2005).

PERI-URBAN LAND GOVERNANCE AND PLANNING

While industrialization in peri-urban Chennai is not limited to Sriperumbudur taluk, a high share of the total industrial land allotted by the state of Tamil Nadu is located in Sriperumbudur. In spite of the strong industrial presence and the associated population growth, there are villages in the taluk that are comparatively less affected by these processes. Thus, it is important to perceive Sriperumbudur not as much as an entity confined by administrative boundaries, but as a place in transformation emerging from regional, metropolitan and global relations, embedded explicitly in local dynamics. Because the concurrence of processes that relate to different spatial scales is also always an exertion of power, articulated in the differentiation of mobility, access and control (Massey 1994). This becomes evident by examining the (formal) governance structure and the (informal) power relations of the region.

There are no simple explanations for how the process of industrialization unfolded in Sriperumbudur.
From an economic perspective, the singular logic of “economies of scale” might explain the logic of industries clustering in a peri-urban region in a developing country. There is also the familiar narrative of the powerful flow of “global” capital which overrides and transforms the place, in a seamless process on a featureless urban plane (Wulf 1999). In reality, the existing power relations and the socio-political narratives of the territory shape the land economy and governance in unexpected and subtle ways.

In order to understand past and current dynamics in this complex peri-urban setup, the different actors, the institutions governing them, and their contestations over resources must be thoroughly studied with regard to land governance which is transforming the built environment. Callon and Muniesa (2005) have made a valuable contribution suggesting the market being the product of conflicts between various “calculative collective agencies”, both non-humans and humans. Similarly, David and Halbert (2014) believed that we could look at these institutions and explain the choice of industries to locate in the periphery. The investments into a peri-urban region increase considerably, owing to the confrontation of “different calculative agencies” and the failure of these agencies to form an all-encompassing land governance framework. Large-scale industrialization is inevitably linked to negotiation and conflicts around land. Thus, in our examination of the peri-urban governance structure we specifically focus on those institutions that deal with the administration of land.

LAND GOVERNANCE IN SRIPERUMBUDUR

Governance in Tamil Nadu can be broadly differentiated between a public administrative structure and a hierarchy of elected bodies. Both structures operate parallel and are linked to each other at different levels. The administrative hierarchy comprises the state agencies with their respective areas of jurisdiction. These agencies consist of a central head office, located in Chennai, and decentralised sub-offices on several regional and local levels. Under the 73rd and 74th Constitutional Amendments, commonly known as the Panchayati Raj, elected bodies are divided into Rural Local Bodies (RLBs) and Urban Local Bodies (ULBs). The Panchayati Raj system is a hierarchy of democratic institutions at three levels: the village panchayat, the panchayat union and the district panchayat. Three types of ULBs exist in Tamil Nadu, depending on the population size and income of the locality: municipal corporations, municipalities, and town panchayats. Sriperumbudur taluk comprises 100 panchayat villages, two panchayat unions and three town panchayats. Furthermore, a small part of Chennai Municipal Corporation falls under Sriperumbudur Taluk.

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5 There are 6839.69 acres of industrial land in Sriperumbudur, which is 28% of the total industrial land allotted by the state in Tamil Nadu, both for Domestic Tariff areas and Special Economic Zones. 941.66 acres are dedicated to Special Economic Zones in Sriperumbudur, which is a share of 50% of the total land allotted for SEZ in Tamil Nadu (as on 21.03.2015, SIPCOT 2015).

6 This is a typical feature of the legacy of the British colonial administration found in other countries as well causing many complications in governance structures (Woiwode 2009).
One of the most sophisticated governance institutions in the state is the revenue administration. A District Collector is heading a district’s revenue department and is the most important bureaucrat in the district. The revenue administration is involved in many aspects especially of rural life. As it deals with the administration of land and other public resources, it plays a crucial role in industrialization and development of Sriperumbudur (Box - 1).

**Box - 1: Revenue administration in Tamil Nadu**

The revenue administration is responsible for the collection of land revenue and associated taxes, e.g. access to public water sources and irrigation systems. Thus all details related to land – ownership title, size of land, access to water sources, type of cultivation and quality of soil – rest with the revenue administration. It is a parallel structure to the hierarchy of the elected institutions and influences regional and local decision-making processes, structured from the department’s head office in Chennai to the village level. The most significant intermediary levels are the district and the taluk. At the lowest level - the revenue village - the village administrative officer (VAO) keeps the records about all the land located in the revenue village and all the changes that are made during the year. Consolidated reports are submitted to the higher level revenue institutions (firkka, taluk and district) and are finally sent to the state government. Sriperumbudur taluk is one of the 12 taluks of Kancheepuram district. The revenue administration is the oldest and one of the most significant and powerful administrations in the state.

Before the British arrived in South Asia, several arrangements of revenue collection existed. During the period of Mughal rule, land revenue was mostly collected by state officials, however after the collapse of the Mughal imperium, de-facto landlords were in charge of collecting land revenue. The British administration built upon different systems in different parts of their territory, as there was doubt about what the “original” land revenue system of India had once been (Banerjee and Iyer 2002: 9). In most of the Madras presidency, the ryotwari system was officially established, in which the state settled the revenue directly with the cultivator (ryot). Since the revenue administration was the backbone of the British administration, the Collector was in the most powerful position on the district level.

In present time, the District Collectorate is still the nodal administrative agency at the regional level. The District Collector is a bureaucrat of the federal administration structure, the Indian Administration Service (IAS). The responsibilities of the Collector have even increased since Independence (Arora and Goyal 1995: 643): the Collector is in charge not only of revenue collection; according to Tamil Nadu Town and Country Planning Act (section 47A), the Collector is also involved in the development of land and the built environment, as the decision for land conversion in certain cases rests with the Collector. Furthermore, in Tamil Nadu, as in many other states, the Collector is the chair of the District Rural Development Agency, thus sanctions the implementation of rural welfare, development schemes and other development works (Palanithurai 2002: 132). The revenue department furthermore gets involved in disaster management and mitigation.

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7 The structure of the revenue administration is not always congruent with rural local bodies of the Panchayati Raj institutions except for the district level; in the case of Sriperumbudur, the taluk geographically comprises two units of the sub-regional level of local government, the panchayat unions (also called blocks) Sriperumbudur PU and Kundrathur PU. Also on the local level, the territories of the revenue villages and the village panchayats are not always congruent. Often a village panchayat is further subdivided into several revenue villages. The revenue division is also not necessarily congruent with the division of urban local bodies (town panchayats, municipalities, municipal corporations). In Sriperumbudur taluk, the three town panchayats are at the same time revenue units. However, Chennai City Corporation, after expansion in 2011, today comprises localities that are outside Chennai district, located in Thiruvallur and Kancheepuram districts. Sriperumbudur taluk, located northernmost in Kancheepuram district, thus also encompasses a few localities of Chennai Corporation.

8 The Manual of the Revenue Department formulates unequivocally the department’s significance: “The Revenue Department is, so to say, the mother of all Administrative Departments. This is the department which touches upon almost all aspects of a Citizen's life. It is all pervasive. Its contribution to the orderly social development is immense.”
LOCAL AND REGIONAL DECISION MAKING

Against the prospect of the 73rd Constitutional Amendment, decision-making power of the rural local bodies is still very limited. Development officials who work in rural local bodies are not installed by these bodies themselves, but by the state government. Thus the local bodies have no possibility to control the work of these officials. The District Rural Development Agencies have not been merged with and put under control of the District Panchayats, as envisioned by the central government (Palanithurai 2003: 12).

The third tier of rural local bodies, the district panchayat, has a controversial stand in Tamil Nadu. Although a three-tier system was enacted with the Panchayats Act 1994, in conformity with the 73rd Constitutional Amendment, the government prioritised a two-tier system, questioning the need of a district panchayat. Both major parties in Tamil Nadu, the DMK and the AIADMK uniformly took this stand (Palanithurai 2007: 73). Until today, the district panchayat is mostly an advisory committee to the government. It has no taxation power, and the control over statutory grants is limited. Another institution on the district level, the District Planning Committee (DPC), consists mainly of elected members from all three levels of local government. This committee shall prepare a development plan for the whole district. However, according to Palanithurai (2015), district development plans have not been prepared so far.

The District Collector plays an important role not only within the administrative structure of the state, as described above. In Tamil Nadu, according to the Panchayats Act 1994, the District Collector is also vested with the power to control the functioning of panchayats and to dissolve local bodies (Palanithurai 2015). The power of the District Collector is only gradually decreasing: when the DPC was formed, the District Collector was made the chairperson of the committee; after years of negotiation, the government installed the district panchayat president as the chairperson of the committee and made the collector the vice-chairperson (Palanithurai 2007: 73).

The District Collector furthermore plays a decisive role in decision-making over allocation of funds. For works and projects costing more than a certain threshold, the local body needs to obtain prior approval from the District Collector. Expenditures to be made with regard to centrally and state sponsored schemes always need to be sanctioned by the Collector, no matter how high the investment may be. Only recently, in 2007, rural local bodies gained more control over their general funds when the state government doubled the margin under which projects can be independently sanctioned by the local body (Government of Tamil Nadu 2007).

Concluding this section, three points can be made. Firstly, the sole authority held by the local and regional institutions is now divided (or even completely removed) by the special agencies set in motion to aid the new growth trajectory. These agencies in operation want to assist or avert this particular direction of growth taking part in the region (David and Halbert 2014). The power struggle and negotiations between these varied institutions becomes essential to understand the logic of how capital operates in a territory.

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5 This position was officially communicated until 2009 in the department’s yearly policy note (Rural Development and Panchayat Raj Department 2009) and is still communicated on the department’s website.
Secondly, in the peripheries, the various nodal agencies have not yet formed a very strong coalition. The co-operation between the industrial investors, the municipality and the village leaders is often non-existent. Thirdly, in India, legally and socially produced contradictions to modernist planning have always been in place, facilitated at times by the very instruments set up to reduce uneven development. Kundu and Sahu (2014) termed this situation a “negotiated approach to planning” where powerful players influence local and state level agencies through their formal or informal networks. Legality then, becomes a field of negotiation in itself. As it becomes muddied, it could also be termed as a certain kind of “informality” (Roy, 2009). For Roy, such a state itself functions through informality, with the use of which it can modify land use, or acquire land, as it wishes and allot monopoly rights over ownership. While slums, the obvious extensions of such deregulation, is seen as a “cancerous growth” preying on the city (Benjamin 2004), industrialization, grounded on the very same forms of deregulation as seen in our study, is welcomed as “public purpose” infrastructure, although it deprives communities of their livelihoods or carries out a large scale displacement of the local people.

EXAMPLES OF TWO IN-DEPTH CASE STUDIES

SOCIAL RESILIENCE WITH RESPECT TO RAPID URBANISATION

Objectives

While industrial expansion in peri-urban Chennai appears to have enhanced the region’s short term economic prosperity, little attention has been given to the impacts of rapid urbanisation on the social resilience of the surrounding villages and towns. Social resilience refers to the ability of a community to maintain their quality of life through environmental, social and economic disturbance and change and subsequently influences the ability of a community to develop socially and economically (Keck & Sakdapolrak 2013, Resilience Alliance 2007, Adger 2000). This is a comparative study of two municipalities in peri-urban Chennai that assesses social resilience through coping, adaptive and transformative capacities (Box-2).

The primary objective of this research is to identify the social resilience of three different employment groups within peri-urban Chennai: land owners, previous agricultural labourers and small business owners. Examining the social resilience of peri-urban employment groups within the two selected locations allowed the similarities and differences between the employment groups to be identified. Contrasting the social resilience between the two research locations. It is hoped that by outlining the importance of social resilience to the development of peri-urban Chennai will encourage policy makers to consider strategies and policies that cater specifically to the strengthening the social resilience of each employment group and subsequently the peri-urban community as a whole.
Box -2: Dimensions of Social Resilience

Coping capacity refers to the characteristics of communities to live with disturbance and overcome adversity (Keck & Sakdapolrak 2013, Putnam 1995, Sapirstein 2006). The primary aspects influencing coping capacity in respect to the social resilience framework that are analysed in this study include: informal networks, infrastructure accessibility and food security.

Adaptive capacity refers to the ability of communities to learn from past experiences and take action in response to, or in anticipation of, future disturbances or threats (Homm 2014, Tompkins and Adger 2004). Adaptive Capacity is therefore evaluated based on: the ability of a community to anticipate future disturbances, the capacity of the community to adapt, and the pre-emptive responsiveness of a community to react to perceived threats. Transformation aims to not only secure the well-being of a community but also to enhance it through the incorporation of progressive change and development (Keck & Sakdapolrak 2013). The major components influencing transformative capacity include: the level of participation, level of social inequality and communication.

Methodology
Field research was conducted primarily involving qualitative semi-structured interviews with the three employment groups in both Molachur and Santhavelur. Municipality presidents, religious leaders and local government offices were also interviewed during the research process to gain a broader understanding of the urbanisation process in the region. Ethnographic observation was used as a secondary tool to provide a greater understanding of how employment groups interacted with one another and how traditional and hierarchical social roles shaped social resilience. Secondary data from the Census of India 2001 and 2011 as well as temporal maps from Google Earth quantify the demographic changes and provided a scope for the recent infrastructural developments which aided in the selection of the research sites.

Preliminary findings
The social resilience of both land and business owners showed relatively high levels. The financial capital and assets owned by business and land owners provided them with a greater flexibility and subsequently a better ability to cope with and adapt to potential disturbances. The cooperative land management strategies utilized by smaller scale farmers and during the frequent meetings for business owners also enhanced the productivity of informal networks and reciprocity, thereby enabling greater coping capacity. Both business and land owners also had access to financial, educational and employment opportunities which enhanced their transformative capacities and which were often furthered by the urbanisation of the region. The ability of business and land owners to contribute and participate in community decision making was still perceived as being relatively low, however, respective meetings for both business and land owner groups provide a platform where concerns could be raised and disagreements could be addressed. Labourers tended to have lower social resilience across all three capacities (coping, adaptive and transformative) when compared with business and land owners. While the informal networks between labourers were found to be relatively strong, the lack of financial capital or assets resulted in lower coping and adaptive capacity. There was an inability of labourers to voice their complaints (lowering transformative capacity) and a general lack of empathy from the other two employment groups about the concerns and issues labours were experiencing.

10 In many cases land owners were not only offered relatively high real-estate prices for their land but also positions within the industry which provided a stable and higher level of income than the land owner would have achieve through continued agricultural practices.
The lower social resilience of the labourers reduced their ability to take advantage of the new economic, educational and employment opportunities offered by the urbanisation process and, in some instances, the urbanisation actually worsened the labourers existing opportunities. The employment opportunities available to the labourers, for example, were diminished by the reduction of agricultural land (particularly within Molachur). It was frequently stated by the labourers that job opportunities within the industries only existed for either migrants or educated individuals. Although the educational facilities and number of children completing high school have increased in the region, there continues to be students who are forced to join the labour workforce after 8th grade due to the limited income of their family. This perpetuates the lack of opportunities and lowers social resilience further.

Conclusions
The high social resilience of land and business owners in conjunction with their ability to take advantage of the urban opportunities (such as increased education and diversity of employment options) is supporting their continued progress. The low social resilience of the labourers, on the other hand, is perpetuating their inability to take advantage of such opportunities. Subsequently inequality between the labourers and the land and business owners is growing. This inequality has the potential to further reduce the productivity of informal networks, participation and communication within the entire community thereby lowering the overall social resilience of the municipalities.

GOVERNANCE OF PERI-URBAN WATER RESOURCES
This second study investigates discursive practices around sustainable water management. Given the seeming abundance of surface water in the region, this is a meaningful research topic, especially in Sriperumbudur taluk with multiple challenges that are not apparent at first sight.

Objectives
The study analyses the political notion of issues around natural resource (water) management of selected actors involved at different government levels. Key questions asked: how do they interpret and convey the current water management schemes? How do they present, evaluate, and paraphrase the current water management schemes, laws and regulations? How do they reflect on the distribution of responsibilities in the region? As governance relates to a "process of interaction and decision-making among the actors involved in a collective problem [water management] that leads to the creation, reinforcement, or [opposition] of social norms and institutions" (Hufty 2011), it’s conclusive to study the discourse around water management.

Methodology
A qualitative research approach was followed using discourse analysis as the primary tool. The empirical data was generated through semi-structured interviews within a well defined case-study area, encompassing several villages, real estate compounds and local as well as state level institutions. Observations of regional management practises and the collection of important documents mentioned by interviewees enlarged the research base. The acquired data was subsequently analysed, by identifying dominating story lines, strategies wording and underlying value statements.

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11 Migrants who were said to be favoured over local residents due to their willingness to work longer shifts, for less income and due to their inability to unionise.
**Preliminary Findings**

The different story lines found often diverged starkly, presenting complex interrelation of problems, a high diversity of proposed solutions and opposing responsibilities. Several systemic problems were identified, of which only two will be presented more in depth. The first problem consists of the deeply rooted believe in progress, following the credo that old management practises are outdated and new and innovative solutions needed. This belief, adhered to by many people’s representatives, has led to several changes in the water governance of Sriperumbudur and even the state of Tamil Nadu. There was a major shift from supplying water through local surface water resources to underground water supply, either through local borewells or interbasin exchange. This has led to several far reaching consequences, apart from the physical loss of the traditional pond infrastructure for rainwater harvesting. Furthermore, the analysis shows that the village ponds are not being utilized anymore because the local population has lost their traditional knowledge of how - and often their willingness, too - to manage them as a source of fresh water.

The reason is that most villages in Sriperumbudur have become part of the government water supply scheme. This scheme involved a switch from using local surface water resources to the supply of individual houses or streets with piped water, which consequently led to the loss of the traditional management schemes. It furthermore caused the detachment of the population from the local water resources, since these were not considered useful anymore they were abandoned, resulting in a shifting of responsibility towards the government. Thus, the water supply became a ‘black box’ and people developed a dependency on the local government bodies for securing piped water for their livelihood. This development seems problematic and results in a paradox, as residents face water scarcity especially during summer months with depleting groundwater while surface water would be available but is not readily accessible.

A second systemic problem is the inherently unequal distribution of water supply and infrastructure between different user and social groups. This problem is more underrepresented in the discourse of most actors and seems to be taken as a given. Although the three villages studied were in total only five kilometre (km) apart from each other, water supply and related infrastructure provision diminished the further one would move away from the Chennai-Bangalore-Highway, i.e. the industrial corridor. In concrete terms, the difference in location means a variance from a one-hour-supply two times a day on average to a 45-minutes-supply every alternate day. In addition, within the villages significant disparities in the water infrastructure and quantity of water received could be observed, varying between streets or individual homes. This contrasts starkly with the upmarket real estate projects – gated communities and townships -, which mostly enjoy 24 hour water supply. These disparities highlight the differences between the periphery and core, which manifests itself on different scales all across the region. The affluent sections of society often draw upon the water resources of the more impoverished communities by extracting larger amounts of groundwater from the surroundings or by inter-basin exchange. This increases the water stress in the region leading to frustration of large parts of the population.

According to their problem description, the actors studied see the responsibility with different actors or in different developments. Therefore, varying solutions are proposed including modifications in the law, capacity building in relevant institutions, educational programs for farmers and villagers, environmental protection measures, anti-corruption campaigns and engineered solutions like the redirection of rivers or construction of several desalination plants.
Conclusions
Overall the analysis identified strengths and weaknesses of the current governance mechanisms and power relations in the field of peri-urban water management, giving special attention to aspects of distributional justice and moral responsibility between the actors involved. Ideally, the findings will help to create more effective urban governance tools, by improving the communication and framing of issues.

CONCLUSIONS

This paper describes an ambitious project, or rather an agenda to set up a process of generating strategic knowledge for climate change adaptation and mitigation in peri-urban regions of India and South Asia. In India, the shift in the political and urban policy environment has gained momentum with the smart city policies emerging under the current Central Government. Going with the broader agenda of this government, it essentially promotes an ‘entrepreneurial urbanisation’ (Dutta 2015), thus globalising increasingly the urban development process by inviting foreign direct investments (FDI) from countries, companies and encouraging global consulting firms to develop and implement smart city plans. But it also causes ruptures in existing programs of urban development in general, which are being discontinued, thus concerning in particular repercussions on the continuity and transition of national urbanisation policies due to the change in government in May 2014, which replaces the previous Jawaharlal Nehru National Urban Renewal Mission (JNNURM) with their smart cities programme and Atal Mission for Rejuvenation and Urban Transformation- AMRUT (for small and medium size towns).

Given this context, especially the industrial development of peri-urban Sriperumbudur fits in well with the goals of an economic globalisation strategy as encouraged by the SEZ policies of the Government of Tamil Nadu. It also resonates strongly with the current Government of India which makes a bid for global investments in India like none before to boost its economic development. What we witness is an entrepreneurial approach to growth through a foreign investment-driven development process with a single focus on socio-technical, high-tech solutions to climate change and sustainable development. In fact what we witness is one of the strongest revivals of the modernist development paradigm with large scale projects (100 smart cities program!) holding up the notion of trickle down effects. The current ‘open systems’ governance structure that permits loopholes for dynamic change may be seen as both symptomatic and supportive of such a paradigm. As discussed, critical commentators and scholars on differentiating globalisation of cities in the South point out what is missing: taking into account more explicitly issues of social inclusion, tackling inequality, how to address the existing urban fabric and areas in the urban fringe, and a balanced approach to environmental concerns.

For a region like Sriperumbudur to become more holistically sustainable and resilient to future climate change risks, a number of factors are important. The two in-depth case studies throw light on some of these. The first one suggests that more attention is required for socially just, inclusive, sustainable development that addresses the needs and potentials of the diverse population – migrants, floating population, original residents, various income groups -, while the second is concerned with one of the most critical issues in the region, water. Water is emerging as a central focus for research in this area, as it is severely critical for the future of Chennai and the metropolitan region. Several studies on water are being launched soon, investigating among others fresh water management and water policies in Sriperumbudur, and in the public health sector a study on water-borne diseases and the poverty nexus.
Additionally, it will be essential how the governance system is organised and adapted to the ongoing development process in such a way that integrated metropolitan regional development takes place.

Interestingly, in the person of town planner-environmentalist Patrick Geddes, India even has a legacy of thinking the city as an integrated whole with its ecological city region. His approach, however, has been largely dismissed (in his time by the British colonial government) and then been forgotten (by the current planning professionals). Unusual for his time, Geddes developed a historical, inclusive, holistic, and deeply ecological approach especially to town planning, many of his key viewpoints are highly relevant even today: cross-/interdisciplinary approach, sensitivity for local contexts (integration of traditional, existing built environment with contemporary urban interventions; use of assets such as existing water management systems like wells and ponds in cities and towns), integration of the city with the larger eco-region. To him, town planning was ‘folk planning’ (i.e. a people and civic oriented exercise rather than a technical issue to resolve sanitation problems and beautify the city). All of these aspects are of utmost significance in the current planning discourses not only in India but around the world, in the context of climate change adaptation planning in cities, and for sustainable urban development.

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NEW SPACES OF URBANIZATION IN RURAL AREAS OF METROPOLIS TIANJIN (CHINA)

CAUSES, PROBLEMS AND STRATEGIES

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ABSTRACT
This paper focuses on emerging new spaces of carrying urbanization in rural areas in Chinese metropolis Tianjin. It starts from the observation of the phenomenon of the emergence of such new spaces. Then, it divides them into two types according to development path: “spontaneous growth” and “urban functional implant”, and further explain their causes of development, process as well as challenges faced by introducing specific cases respectively. After that, it makes a comparison of the two types of new spaces in terms of the initial condition, development process and result, finally proposes recommendation for policy making. This paper argues that the new spaces are supposed to be promoted step by step based on complying with their “spontaneous” laws, respecting their original basis and identifying problems, but not “forced implant”. The key point of policy making is to strengthen the “chaining channel” (integration of industry, transport and information infrastructure) between new space and traditional urban centre through highlighting the actor role of market enterprise and civil society.

KEY WORDS
Metropolis; Tianjin City; Rural area; New space; Urbanization; Policy making
PREFACE

Dealing with “city disease” and promoting sustainable development of overly concentrated megacities have always been the focus of concern in spatial planning field. In this regard, many efforts like “New Town Movement” and “Edge City Movement”, etc. originated from western developed countries had been trying to relieve “great city disease” through cultivating new urban spaces. In the meanwhile, such new urban spaces are potentially innovative, which could be contributed in promoting urban competitiveness in a worldwide range (Frederick, 1967; Hall, 1972).

Recently in developing counties like China, cultivating new urban spaces is also becoming a strategical countermeasure for dealing with population expansion, traffic congestion, etc. and guiding selection of housing location. There is a point that the “new town” planning and development issues as well as problems encountered in developing counties are the same as in western developed countries to some extent (Afrakhteh, 2001).

Especially In the rapid process of Chinese urbanization, rural areas located around metropolis have been universally encountering population outflow and resulted social problems such as “stay-at-home children and elderly”, etc. It should be noticed that new spatial patterns that excel in creating non-agricultural jobs are increasingly emerging and booming in rural areas against with this situation. In this regard, the Chinese metropolis Tianjin can be selected as a typical case.

STUDY AREA

Tianjin is a metropolis in northern China bordering the capital Beijing and Hebei Province [fig. 1], which has a total area of 11,946 km$^2$ and population of 15.16 million persons. It is transforming into a hub city for international shipping, logistics and modern manufacturing and service, etc. In addition, Tianjin is governed as a direct-controlled municipality of China, which is further divided into 16 administrative divisions, including 5 peripheral rural counties composed of towns and 11 inner urban districts all under the governance of central municipal government of Tianjin$^1$.

The five peripheral rural counties (particularly towns inside) around urban central place are the study areas in this research [fig. 2], as some basic data shown below [table1]. The data and information in following contents were all collected during the participation process in preparing the latest spatial planning tool Urban Master Plan for Tianjin (2015—2030)$^2$, which serves to support arguments.

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$^1$ By referencing the German administrative system, in Tianjin: “direct-controlled” means “Stadtstaat” simiar to the city state like Berlin, Bremen, etc. “peripheral county” is similar to “Stadtkreis”; “town” are similar to “Geminden”.

$^2$ Urban Master Plan: Chinese formal planning tool at the local level, which is a comprehensive plan, similar to the Local Land Use Planning in western spatial planning system
Statistical index | Year | Statistical value | Measurement unit
--- | --- | --- | ---
Land area | 2013 | 7193 | KM²
Total population (Urbanized population) | 2010 | 364.6(134.0) | Ten thousand persons
Urbanization rate | 2010 | 36.8 | %
Gross domestic product | 2013 | 356.4 | 100 million Euro

[Table 1] Basic data of rural areas (5 peripheral counties) in Tianjin. Source: Authors’ own investigation

[fig.1] Metropolis Tianjin in China

Source: China Academy of Urban Planning and Design

[fig. 2] Rural areas in Tianjin
PHENOMENON: EMERGING NEW SPACES OF URBANIZATION

Recent ten years an obvious tendency in Tianjin’s rural areas could be observed: continuous growing construction lands and population. Firstly, through comparison of urban construction lands between 2009 and 2014 it can be seen that besides in traditional county towns (administrative centres in rural areas), the urban construction lands had been rapidly increased in almost other ordinary towns, such as Cuihuangkou Town in Wuqing County, Zhouliangzhuang Town in Baodi County, Yangchengzhuang Town and Daqiuzhuang Town in Jinghai County [fig. 3].

In addition, the population had also been raised in these areas along with the growth of new urban construction spaces. As the fastest-growing towns listed below [Table 2], particularly in which the population of Daqiuzhuang Town had been increased by three times from 2000 to 2010. Besides these listed towns, the population in other towns all had increased by more than 20% within ten years. The growing construction lands and population in rural towns represent the phenomenon of emerging “new spaces of urbanization in rural areas” in Tianjin.
NEW SPACES OF “SPONTANEOUS GROWTH”

These new spaces mentioned above can be further classified into two types according to their development path: “spontaneous growth” and “urban functional implant”.

This type means the new spaces received less attention and promoted not actively by the central municipal government due to their “remote” locations (far from the traditional central urban area). However, they are brave in developing industrial chains highly connected with traditional central urban area as the extension and thus acquire development chance. They are therefore called as the “super industrial chaining zones”. The cause behind of this development path can be largely attributed to the promotion of native entrepreneurship by taking advantage of low cost. Take two towns as examples: Daqiuizhuang Town and Cuihuangkou Town.

ESSENCE: CAUSES AND PROBLEMS

These new spaces mentioned above can be further classified into two types according to their development path: “spontaneous growth” and “urban functional implant”.

NEW SPACES OF “SPONTANEOUS GROWTH”

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TABLE 2: Fastest-growing towns in terms of population

<table>
<thead>
<tr>
<th>Title of town (county of belonging)</th>
<th>Population in 2000 (persons)</th>
<th>Population in 2010 (persons)</th>
<th>Increased quantity (persons)</th>
<th>Growth rate in 10 years</th>
<th>Type of town</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daqiuizhuang Town</td>
<td>17697</td>
<td>72194</td>
<td>54497</td>
<td>307.9%</td>
<td>Ordinary town</td>
</tr>
<tr>
<td>Jinghai Town</td>
<td>81730</td>
<td>154325</td>
<td>72595</td>
<td>88.8%</td>
<td>County town</td>
</tr>
<tr>
<td>Yangchengzhuang Town</td>
<td>20063</td>
<td>24987</td>
<td>4924</td>
<td>24.5%</td>
<td>Ordinary town</td>
</tr>
<tr>
<td>Chengguan Town</td>
<td>97870</td>
<td>201810</td>
<td>103940</td>
<td>106.2%</td>
<td>County town</td>
</tr>
<tr>
<td>Zhouliangzhuang Town</td>
<td>8946</td>
<td>32182</td>
<td>23236</td>
<td>259.7%</td>
<td>Ordinary town</td>
</tr>
<tr>
<td>Meichang Town</td>
<td>18204</td>
<td>35033</td>
<td>16829</td>
<td>92.4%</td>
<td>Ordinary town close to the main urban centre of Tianjin</td>
</tr>
<tr>
<td>Nancaicun Town</td>
<td>24473</td>
<td>47091</td>
<td>22618</td>
<td>92.4%</td>
<td>Ordinary town close to the main urban centre of Tianjin</td>
</tr>
<tr>
<td>Cuihuangkou Town</td>
<td>34658</td>
<td>51541</td>
<td>16883</td>
<td>48.7%</td>
<td>Ordinary town</td>
</tr>
<tr>
<td>Chagugang Town</td>
<td>33913</td>
<td>44843</td>
<td>10930</td>
<td>32.2%</td>
<td>Ordinary town</td>
</tr>
<tr>
<td>Lutai Town</td>
<td>49214</td>
<td>136379</td>
<td>87165</td>
<td>177.1%</td>
<td>County town</td>
</tr>
<tr>
<td>Shangcang Town</td>
<td>20702</td>
<td>33380</td>
<td>12678</td>
<td>61.2%</td>
<td>Ordinary town</td>
</tr>
</tbody>
</table>
As mentioned previously, Daqiu Zhuang Town experienced rapid population growth from approximately 17 thousand to 72 thousand between 2000 and 2010 (see Table 2-1), which could be comparable to the amazing development speed of historic “Shock city” in Manchester. This new space is largely benefited from its “chaining of iron & steel industry” [fig. 4]. Based on cheap land price, tenement and labor force in countryside, in recent thirty years Daqiu Zhuang Town was devoting itself to manufacturing construction materials (seamed steel pipe) that were not wanted to do by traditional central urban area due to the intention of “industrial transformation”, which supported Tianjin becoming a big iron and steel production base in China. At the initial development stage, an enterpriser grew up in Daqiu Zhuang Town who was once working for Tianjin Iron & Steel Co.Ltd created steel factories, brought a wealth of information regarding steel production and then employed many professional staff working on production and sales. In the subsequent development process, Daqiu Zhuang Town was always interacting with Tianjin Iron & Steel Co.Ltd. After that in 2013, the value of industrial of Daqiu Zhuang Town reached 73.8 billion yuan (10.5 billion Euro) and its employed population from surrounding villages exceeded 50 thousand persons. It can be said that on the one hand Daqiu Zhuang Town has helped surrounding native rural people in getting rid of poverty. However on the other hand, problems also appear accordingly, including environmental pollution triggered by iron and steel production, shortage of public service facilities (especially education and medical treatment) resulted from excessive population growth and so on.

![Daqiu Zhuang Town (chaining of iron and steel industry)](image)

**Source:** China Academy of Urban Planning and Design

Another example Cuihuangkou Town was once an important “carpet manufacturing hub” in early 19th century, which had the deep tradition of business of trade historically. In recent years, electronic commerce industry is in rapid developing situation in Tianjin and capital Beijing. Under this context by virtue of the location convenience (Cuihuangkou Town is located between Tianjin and Beijing) and also rich labor force as well as cheap land price, this town has attracted a number of Chinese e-commerce enterprises (similar to Amazon) putting their “industrial chain” of warehousing and logistics distribution here. Thus, a new industry pattern has been formed, in which main urban centres in Tianjin and Beijing are the e-commerce headquarters while Cuihuangkou Town serves as the middle distribution centre [fig. 5]. The requirements of service and employment of e-commerce industry have largely influenced original rural villages nearby, which have facilitated local villagers to be engaged in non-agricultural employment and rental of private village housing for factory using. However, its current main problems are still shortage of public service facilities and municipal infrastructure system (water, electricity).

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3 Tianjin Iron & Steel Co.Ltd: old brand enterprise founded in 1935, one of the top 500 enterprises in China
To sum up, this type of “spontaneous growth” new spaces is originated from developing country-based industries (processing industry, trade, tourism, etc.), which is a “bottom-up” development path dominated by “civil economy”. The key actors involved are indigenous capable enterprisers promoting the participation of surrounding village residents. At the initial stage, these “spontaneous growth” new spaces might be commonly regarded as “remote”: weak in traffic connection with traditional urban centre, and therefore were often out of development preference from the municipal government. From another perspective, they have advantages including rich and low-cost land and labour force. Therefore, they can identify “bottom” market needs and develop those fundamental industries “abandoned” by traditional urban central place, then further grow into the “industrial chaining zones” and obtain fast development opportunities. This development process is also in favor of strengthening interactions with surrounding villages (absorb villagers as labour force) and stabilizing the social structure of countryside. As a consequence, such new spaces are characterized by vibrant industry, high rate of employment, strong market adaptability and innovativeness. However in the meanwhile, pressing problems like shortage in public service, infrastructure and traffic conditions as well as ecological pollution resulted from unexpected population and development speed are becoming more and more serious.

NEW SPACES OF “URBAN FUNCTIONAL IMPLANT”
This kind of new spaces means those areas promoted actively by central municipal government of Tianjin due to location and environmental advantage (relatively convenient traffic connection with urban central place, close to natural landscape resources such as big lake). From the “top level”, the intention of cultivating such new spaces in Tianjin is similar to the idea of “new town plan in Great London Area” and “more cities in megalopolis Tokyo”, which is attempted to form “counter-magnetic systems” against overly concentration in traditional metropolis centres. These new spaces have been identified in the formal planning tool Urban Master Plan for Tianjin (2005-2020). This urban master plan have planned total 11 new towns, in which nine are traditional countryside centres (county towns), and the other two are brand-new uncultivated areas to be constructed. These two areas are taken as examples to explain this kind of new spaces: Jingjin New Town and Tuanbo New Town. Specifically:

The planned Jingjin New Town used to be a farm land located in Zhouliangzhuang Town (belongs to Baodi County). As can be seen from its name that it is expected by the municipal government of Tianjin to take the regional responsibility of carrying redistribution of population and urban functions of Beijing and Tianjin (“Jing”-“jin”). According to Urban Master Plan for Tianjin (2005-2020), this
Jingjin New Town is supposed to be grew up to 53 square kilometers in 2020, which should carry emerging industries (especially tertiary industries) including tourism and recreation, health service, ecological residence, conference and exhibition, modern financial service, etc. However in reality, this new town has been being affected by the “cooperation of government and big real estate enterprise”, which has been put focus on regional real estate construction by taking high-grade villas as the main. As a result of this development path, till 2014 90% of about 3000 built villas are vacant, and rental rate of shops is lower than 50%. Jingjin New Town seems to have become a “ghost city” which lacks growth of living population and employment, although its construction lands located and buildings are still “growing” [fig. 6].

As to another planned Tuanbo New Town, it is located in both existing Yangchengzhuang Town and Tuanbo Town of Jinghai County [fig. 7]. The current status, problems and cause behind of Yangchengzhuang Town is almost the same with Jingjin New Town, which is also like a “ghost city” resulted from the model of “cooperation of government and big real estate enterprise”. And in the Tuanbo Town, previously the central municipal government hoped to move sport function of main urban centre here as the motivator. As the result, the Tianjin Sport Centre is established here with 27 sport stadiums (shooting gallery, hockey hall, bicycle hall, etc.), which hosted the Eastern Asian Games in 2013. However, it is facing problems like low utilization rate, difficult recovery of investment funds, etc. that are similar to some other post-games utilization of sport centres.

In all, this type of “urban functional implant” new spaces has been being actively “endowed with” urban functions (real estates, public activities, etc.) through planning tools and policy making, which can be viewed as a “top-down” development path dominated by “colonized economy”. The key actors
are mainly the government and its “partner” property developers. In the development process of such new spaces, massive up-front investment and energy have been spent on improvement of traffic conditions and infrastructure construction, demolition and relocation of indigenous residents, and so on. On the one hand, the municipal government is at enormous financial risk because pre-investment cannot be balanced. On the other hand, such practice of “housing demolition and resident relocation” forces some indigenous villagers to move out because of land appreciation (the new housing might be unaffordable for them), which in fact destroys the original countryside lifestyle. As a consequence in reality, there are big gaps existing between actual status and expected planning goals of such new spaces. They are like “ghost cites” or “isolated islands” segregated from local atmosphere, whose positive effects of carrying urbanization are lower than those “spontaneous growth” new spaces but negative problems are even more difficult to be solved.

CONCLUSION: RETHINKING AND STRATEGIES

<table>
<thead>
<tr>
<th>Initial stage</th>
<th>New space of “Spontaneous Growth”</th>
<th>New space of “urban functional implant”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strength</td>
<td>Rich and low-cost lands and labour force</td>
<td>Good traffic connection with urban central place and natural landscape resources</td>
</tr>
<tr>
<td>Weakness</td>
<td>Weak traffic connection with urban central place</td>
<td>Weak industrial basis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Development process</th>
<th>New space of “Spontaneous Growth”</th>
<th>New space of “urban functional implant”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation</td>
<td>Industrial chaining zone with urban central place</td>
<td>Counter-magnetic centre</td>
</tr>
<tr>
<td>Path</td>
<td>Bottom-up</td>
<td>Top-down</td>
</tr>
<tr>
<td>Key actor</td>
<td>Indigenous capable enterprisers + surrounding residents</td>
<td>Government + property developers</td>
</tr>
<tr>
<td>Tool</td>
<td>Civil economy (market-oriented fundamental industries compensating for urban centre by self-entrepreneurship, market exploration)</td>
<td>Colonized economy (high-end service industries by spatial planning tool, policy support, public investment)</td>
</tr>
<tr>
<td>Actual status</td>
<td>Vibrant industry, high employment, strong market adaptability and innovativeness</td>
<td>Good appearance and environment, lack of popularity</td>
</tr>
<tr>
<td>Social effect</td>
<td>Integration with native atmosphere</td>
<td>Divergence from expected goal, segregation from native atmosphere</td>
</tr>
<tr>
<td>Challenge</td>
<td>Shortage in public service, traffic and infrastructure, environmental pollution</td>
<td>Unbalanced pre-investment and reward, low utilization rate and low employment</td>
</tr>
</tbody>
</table>

(table 3) Comparison of two types of new spaces
Source: Authors’ own construct

Overall speaking, the different two types of new spaces mentioned above all play a big role in past urbanization process in Tianjin, which serve as “secondary centers” functioning in carrying urbanized population, providing with non-agricultural jobs and connecting rural areas with traditional urban areas. A comparison can be abstracted in terms of their characteristics [table 3].
Through rethinking of their different development path and causes behind and problems as well, some common points can be concluded:

In terms of metropolis, the new spaces of urbanization that can really promote aggregation of population and create job opportunities must be those potential “chaining zones” highly connected to traditional urban centre, including chaining of industry and innovative information as well. Such areas can accommodate the function spillover from traditional concentrated urban centre, which on the one hand share the culture of metropolis and get promotion for themselves by taking advantage of native labor force and low cost; on the other hand also support the traditional urban central place’s “industrial transformation” so as to promote more external competitiveness. Although government-oriented “great construction activities characterized by “forced implant” can promote some “new towns” and make them resemble to traditional urban area in a physical and visual dimension, these new spaces normally lack endogenous development motivation (extension of industrial basis, native culture) not able to interact with surrounding atmosphere and further get into dilemma.

In terms of strategy for cultivating new spaces of urbanization in metropolis Tianjin, the local government is supposed to comply with their spontaneous “bottom” laws, promote them step by step based on respecting their original basis and identifying problems, but not “make a fresh start” taking the way of subjectively colonizing urban functions through a “mass demolition and mass-construction” process. This paper finally argues that the key point of policy making is to strengthen the chaining channel (integration of industry, transport and information infrastructure) between new spaces and traditional urban central place through highlighting the actor role of market enterprise and civil society, so as to minimize segregation.

REFERENCES
SCALE ANALYSIS OF THE URBAN LANDSCAPE HIERARCHY IN VULNERABLE SETTLEMENTS IN SÃO PAULO

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ABSTRACT
The review of the Parcelling, Occupation and Land Use Law of São Paulo, currently being drafted, encourages the enhancement of the existing social planning tools, since more than 25% of dwellers still live in vulnerable settlements. Indeed, these precarious living conditions represent a very complex phenomenon, in which income inequalities, ethnic divisions, educational deficiencies and criminality are intertwined in all their facets. This network of multidimensional interactions occurs and reproduces itself within the urban context, planned and self-built, in a system of consolidated or emerging constructed forms. So considered the complexity in which the city is organized, a method of fieldwork is applied at two areas of São Paulo, bringing out their existing urban structure, as well as the fabric deficiencies that prevent the emergence of a favourable environment for life and people interaction. Through a collection of photographs and measurements, the spatial forms were classified into a succession of scales. The relationship between these scales were mathematically analyzed, by means of three algebraic expressions, and compared with ideal proportions derived from the scientific literature. The achieved results show that, in a scale, the frequency of constructed forms determines the desolation or the liveliness of an urban environment; secondly, the place vulnerabilities can be associated with a high scales concentration as a very small number of them; finally, the connection and the cooperation between scales are really crucial factors in the urban place changing capacity. Comparing scale relationships and real urban conditions, the absence of liveliness, identity and collective activities is found in the presence of a too close or too sparse scalar progression. The article
highlights these areas as key locations to redesign and rethink the citizenship, starting from the participation of the whole social fabric; each one from its spatial scale and without neglecting the importance of anybody.

KEY WORDS

Scale; Urban instrument; Social interest; Urban morphology; Hierarchy
INTRODUCTION

Experiencing the many landscapes of São Paulo city, the detected diversity is striking. Many urban life conditions are possible; simultaneous and close, they share the same territory. In terms of morphology, the constructed shapes are not just containers of this urban diversity; on the contrary, they are the cause, the effect and they can be easily identified with a kind of lifestyle, an income value, an access to culture or health of the occupant dweller. This variety of built form is not random, although very difficult to map. It is the result of the interaction, unrepeatable, of a multiplicity of agents and built objects, subject to the transforming action of the weather, climate and man himself who is involved in them. The products of these interactions rise with the growth of the São Paulo population, and its need for survival; they stratify, accumulating a new built mass and a new story in the structure of the "whole", the São Paulo megalopolis. Understanding such organizational structure requires understanding the web of interactions above. Due to the depth in which these interactions take place, this type of structured distribution will be called hierarchical, contrarily from a horizontal and linear distribution, that does not reflect either urban systems or the natural ecosystems in which we are involved. It follows that, albeit hidden or incomplete, a hierarchical elements arrangement is implicit in the complexity of multi-level urban space.

Empirical studies investigating nature and its elements, showing the existence of a natural scale hierarchy that objects display, from their largest dimension to the smallest, a drop approximately proportional to the value 2.7 (Salingaros, 2006). According to Greenberg and Jeronimidis (2013), the rainforest can be seen as a system of variable density overlapping layers, whose species follow three different strategies of morphogenesis. The first group at the top capture the solar energy maximum. The second group, situated in the undergrowth, expands filling the light niche when bigger trees leave a gap after a fall. Finally, there are the dead or damaged trees that not actively compete but slow down the growth of other groups. The three vegetable categories, despite competing, live in symbiosis and favor the co-presence of different microclimates where animals live. The layering of forest can help reading the city stratification in which the elements are placed and urban people compete to access housing and services. The large real estate buildings, repeated similarly in the metropolitan territory, as the highest trees of the forest, are able to maximize accessibility to resources for the same limited ground area but frequently disconnected and poorly integrated into the urban fabric. The medium size objects, living in the shadow of the largest, capture the sunlight whose passage is not impeded. Finally, small irregular constructions, such as slums, suffering even worse climatic conditions and energy supply, end up being the most affected group within the city ecosystem.

In fact, the object or the inhabitant location in the structural hierarchy of his habitat, promotes or prevents access to resources, freedom of movement, lifestyles, feeling of community. Going beyond the classical social class division, the existence of a hierarchical structure ensures the life of living beings; it should be understood as a growing form, wherein each component is interconnected with others; no one is independent. This study aims to understand, in the midst of urban chaos, how to recognize the city hierarchy and then how to operate in it, since the its importance is unveiled. The strength of this theoretical overture is tested in the reality of an urban Brazilian context, resulting in a practical application that reflects the potentials and the difficulties about implementing this approach. Two São Paulo zones of precarious housing are selected to analyze the morphological structure of the existing forms and the relationships between them. A scalar constant $e = 2.7$, based on Salingaros

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4 From Greek, hierarkhia, all the degrees that make up every social order.
(1998), is the proportional ratio that will be used to mathematically regard the spatial hierarchy met on the field. The ideal hierarchical proportions, computed by the use of this constant, are taken into consideration as guidelines to rethink the urban structure as a place able to combine the presence of human scale with all the other built forms around it.

**APPROACHES TO THE STUDY OF URBAN SCALES**

The scale study, here proposed to approach the São Paulo hierarchical built landscape, arises from the theoretical framework developed by mathematician Nikos Salingaros to understand the relationship between built forms and people (Salingaros, 1998). According to him, a scale is supposed to be a layer composed of all the elements that have approximately the same size. Coherence scaling is achieved by connecting different scale levels, identified as units and delimited by recognizable boundaries. "The small scale is made up of strong interactions between elements, the large scale of weaker interactions (...) the larger scale requires the existence of lower ones, but not vice versa" (Salingaros, 2000). The mathematics and complexity theory contributions are used to investigate the structural order that shape the built environment, looking for the optimal distribution of elements and an overall coherence. A scaling or power rule, \( \frac{x_{n+1}}{x_n} = k = e = 2.718 \), based on the natural logarithm, is proposed to compare the existing scalar succession with an ideal sequence of \( n \) scales in \( x \) dimension. Within each scale, another maths expression \( p = c/x^m \), in the literature called multiplicity, is introduced to study the aggregation of \( x \) size and \( p \) frequency elements at each level of scale. In other words, "the frequency of an element of size \( x \) is proportional to the inverse of its size in a scaling exponent \( m \) related to the system properties"\(^5\) (Salat, 2014). The universality of these rules is valid regardless of the \( k \) value; they describe the natural growth of things, being found in nature, in artifacts, in buildings and, finally, in the city as a whole.

From this parallel between the exponential growth of nature and anthropomorphic environments, Salingaros (1998) derived the value of \( k = e = 2.7 \). The bacterium body, the seashells shape and horns: all of them exhibit a constant exponential growth, from the small scale up to the largest, always exhibiting a coherent hierarchy. However, the value 2.7 is a choice among others options. Alexander observed and measured that objects with a scale factor around 3, in the range between 2 and 5, tend to dominate in nature as well as being preferred by people (Salingaros, 2012). He characterized the law of scale or power to measure urban structures, proposing a first constant \( 2 < k < 5 \); this value was perfected in a final constant \( 2 < k < 3 \) in the book "The Nature of Order" (Alexander, 2004). Other comparisons come from the Koch, Peano and Singer fractal models, which mathematically describes the growth of natural structures through the constant \( k = 3 \) or \( k = 2.65 \) (Mandelbrot, 1983)\(^6\). By contrast, a scale hierarchy based on the golden ratio \( k = 1.618 \), generates, according to recent studies by the same author, a succession of very close architectural subunits, resulting in a continuous gradient, rather than in a discrete distribution. Another interesting similarity, which enhances the reliability of a constant next to the value 3, is found comparing the Fibonacci series with \( k^n = 2.618^n \), \{1, 3, 8, 21, 55, 144, 377, 987 ...\} with the sequence developed from constant \( e \), \( k^n = e^n \): \{1, 3, 7, 20, 55, 148, 403, 1097 ...\}. Both series are similar in the first terms, moving away with the exponential increase (Salingaros, 2006).

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5 plenty of small urban objects and small amount of large objects

6 Apud in *A theory of Architecture*. (Salingaros, 2006.)
The urban systems scaling hierarchy greatly influences energy efficiency and urban sustainability (Salat et al., 2012), because of the social, environmental and energy footprint caused by the different forms of distribution in consecutive hierarchical layers. Following the reasoning of Salat et al. (2012), different scales create an abundance of microclimates within the urban fabric where physical phenomena, such as wind and light, spread through; each of them is associated with a need of thermal energy to consume, depending on the type and degree of its isolation enclosure. Besides, within these scales, a set of social balances will take place. When all scales cooperate, a single hierarchical structure is recognizable and, inside it, people’s relationships appear integrated, the public sphere meets the private one and various forms of urbanity emerge according to the needs of the population. Conversely, a missing or disproportionate hierarchical structure can encourage segregation between scales, therefore residential isolation or discrimination in the use of public space. Tangible examples of these consequences are found in São Paulo where the suburban expansion, the growing demand for mobility and accessibility “tend to produce territorial impacts, reflected in the new scales of the urban equipment and their influence areas” (Prosperi Meyer and Grostein, 2004).

METHODOLOGY TO BRING OUT THE URBAN HIERARCHICAL STRUCTURE

The morphological analysis, conducted in two sites of São Paulo city [fig.1], is articulated in three phases that work together to map and to understand the urban hierarchical structure. A first phase of field work planning, an intermediate stage of practical fieldwork occurred in the street, a third phase of collected data treatment and analysis. At the end of these three stages, the proportions between the scales are computed.

PHASE 1 - PLANNING OF EMPIRICAL FIELDWORK

Two significant urban areas were selected in São Paulo. The first, located in the Cidade de Nova Heliópolis, in the south-east zone [fig. 2 and 3], is supposedly characterized by a small number of
scales (area with a dispersed hierarchical structure); the second, located in the Flamengo\(^7\) favela, in the north zone [fig. 4 and 5], is supposedly characterized by an abundance of scales (area with dense hierarchical structure). Because of their construction types, repeated and spread in their surroundings, these two locations were chosen within the selected areas, to study the hierarchical structure and the sequence of existing scales.

[fig. 2 and 3] Cidade de Nova Heliópolis, perspective and perimeter of the study area

[fig. 4 and 5] Flamengo slum, perspective and perimeter of the study area

The underlying hierarchical structure was investigated by means of a photographic collection and by measuring built forms found on the site. The main points, from which the photos were taken, were organized in the planning phase and located along the perimeter of each site (red points in Figure 6 and 7). Thus, the totally area was covered and supplied with the necessary information.

\(^7\) The Flamengo slum lies among the Jardim Antártica, Vila Pedra Branca, Vila Santos districts.
PHASE - THE FIELDWORK
The fieldwork aimed to measure the scale of the elements lying in the space under study. All these scales constitute the hierarchical structure of the site; their identification is a space reading task that begins with the macro analysis of place, going through the identification of the main larger components, up to the observation of details, descending from the largest perspective to the smallest. In the first site, Nova Heliópolis, two parallel building blocks on the long side, two blocks on the shorter side and a courtyard between them were recognized. In the second site, the Flamengo favela, 2 lines of houses and a triangular central square were identified. The elements composing these main units were photographed and measured in both locations. In each of the sites, all the information related to the inhabitants habits and perception of the photographed space was collected.

PHASE 3 - POST FIELDWORK TREATMENT
The photographic material and measurements have been meaningful data to explore. First, the scales were identified, using the pictures and measures of all the built objects that shape the environment. According to Salingaros (1998), urban elements with different shape and function may belong to the same scale. For each picture, groups of similar objects were ranked in scales; the scales were associated with a measure, according to their main real size taken on the site [fig. 7 and 8]. Although each of these items obviously has three dimensions, just the linear horizontal dimension was considered, as being responsible for the extension in space from the street user point of view of the. That is, public space hierarchical coherence is the heart of this investigation, the depth size has not been considered while the height size was always found to be negligible.
When all the pictures were associated with the measures, the $n$ scales were gathered and listed from the smallest to the largest. In this scalar list, the greatest size $x_{\text{max}}$ scale (the major side of the area in the analysis) and the smallest size $x_{\text{min}}$ (0.1 m, chosen to include various equipment and details) were highlighted with colors; between these two extremities, intermediate scales were arranged.
CALCULUS OF THE SCALE PROPORTIONS RAISED IN THE FIELDWORK

Once the scales were classified in a table, three mathematical operations were performed with the collected data. In the first computation, given the greatest and the smallest size scales $x_{\text{max}}$ and $x_{\text{min}}$, expressed in meters, the ideal number of scales, which should be detected, was estimated by applying the formula $n_{\text{ideal}}=1+\ln x_{\text{max}}-\ln x_{\text{min}}$. The computed ideal values were compared with the number $n_{\text{real}}$, actually found in the existing landscape. At a second step, for each scale, the proportion between pairs of consecutive scales were calculated by the formula $k=x_{n+1}/x_n$, with $k$ scaling constant. From here, the difference between the values of $k_{\text{real}}$ and $k_{\text{ideal}}=\text{constant}=e=2.7$ was calculated. Thirdly, given the multiplicity $p$, which refers to the number of objects that composes each $x$ size scale, the distribution of these urban forms was calculated from the power law $p*x^m=c$, known the exponent $m=1$. The computed values at each level were compared among them. Subsequently, the difference between the values $c_{\text{real}}$ and $c_{\text{ideal}}=\text{constant} e=2.7$ was calculated, too.

THE RESULTS FROM THE CASE STUDY METHODOLOGY APPLICATION

The data collected offered pertinent information to analyze the hierarchical structure of the two urban areas presented throughout the previous step. In the first site, Cidade de Nova Heliópolis, made up of four blocks of buildings and a central space, a total of 19 scales was identified. [Table 1] shows the sequence of scale, found at each block and in the courtyard. The block with the largest number of scalar levels (13) is the second one while the poorest (9) is the first one. Therefore, the scaled density of the second block is greater than the first. Since the first block is the widest, this difference is even more remarkable, as the scales are distributed over a larger size, resulting in a more dispersed pattern.
Furthermore, the courtyard has the smallest number of levels, with only 4 scales dialoguing with the perimeter built volumes. The smallest scale, established equal to 0.1 m, was found in all the analyzed pictures and is thus common to all the five main components. As it can be seen in [table 2] the scales sequence may be dense or sparse; a certain scale x₁ could correspond to a small size or large size, depending on how many scales constitute the sequence of the area totality under review. Furthermore, as previously said, the function assumed by the analysed object is secondary; different elements, irrespective of their role in space can belong to the same level. For example, in block 1, level x₃6 comprehends the whole of the gas shelters and the width of the stair band visible on the facade.

<table>
<thead>
<tr>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>x₁ = x₃8</td>
</tr>
<tr>
<td>x₁ = x₃0</td>
</tr>
<tr>
<td>x₁ = x₃9</td>
</tr>
<tr>
<td>x₁ = x₃1</td>
</tr>
<tr>
<td>x₁ = x₃10</td>
</tr>
<tr>
<td>x₁ = x₃11</td>
</tr>
<tr>
<td>x₁ = x₃12</td>
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<tr>
<td>x₁ = x₃13</td>
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<td>x₁ = x₃14</td>
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<td>x₁ = x₃15</td>
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<td>x₁ = x₃16</td>
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<td>x₁ = x₃17</td>
</tr>
<tr>
<td>x₁ = x₃18</td>
</tr>
<tr>
<td>x₁ = x₃19</td>
</tr>
<tr>
<td>x₁ = x₃20</td>
</tr>
<tr>
<td>x₁ = x₃21</td>
</tr>
<tr>
<td>x₁ = x₃22</td>
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<td>x₁ = x₃23</td>
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<td>x₁ = x₃24</td>
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<td>x₁ = x₃25</td>
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<tr>
<td>x₁ = x₃26</td>
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<tr>
<td>x₁ = x₃27</td>
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<tr>
<td>x₁ = x₃28</td>
</tr>
<tr>
<td>x₁ = x₃29</td>
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<tr>
<td>x₁ = x₃30</td>
</tr>
<tr>
<td>x₁ = x₃31</td>
</tr>
<tr>
<td>x₁ = x₃32</td>
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<td>x₁ = x₃35</td>
</tr>
<tr>
<td>x₁ = x₃36</td>
</tr>
<tr>
<td>x₁ = x₃37</td>
</tr>
<tr>
<td>x₁ = x₃38</td>
</tr>
</tbody>
</table>

Comparing Flamengo to Nova Heliópolis, the scales identified are more frequent and smaller in size [table 2]. We counted 34 and 38 scales along the two building lines bordering the square, with the church on the corner as a major measured element (15.6m). Here we are dealing with a much denser hierarchical structure, with a high concentration of scalar levels within a smaller space. Unlike Nova Heliópolis, where the hops between successive steps were remarkable, in this location, a wide scalar variety of every size of objects has found, with no gaps between a scale and the subsequent level. As shown [table 2], each mapped element takes place in the hierarchical scale; from the houses to the balconies decorations, all elements are relevant to evaluate the integrity of the space system under review. The sum of all these contributions takes part to the urban system coherence, participating in its evolutionary change process; no scale can be relieved from this responsibility. In contrast to this richness, there is an inconsistent number of hierarchical levels (5) in the central square of Flamengo, the only public space planned among a dense self-construction around it. In other words, the urban intervention is not complemented by an human activity that takes part to this area and self-organizes.
itself around it. The distance between the major and minor scales shows the absence of a growing progression which could connect the human scale experience, with the multiplicity of other levels and other individuals, so that the square could be regarded as a whole.

<table>
<thead>
<tr>
<th>Scale sequence</th>
<th>Houses (first line)</th>
<th>Houses (second line)</th>
<th>central square</th>
</tr>
</thead>
<tbody>
<tr>
<td>n = 0</td>
<td>door strips, door</td>
<td>door strips, door</td>
<td>door strips, door</td>
</tr>
<tr>
<td>2</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>3</td>
<td>partition-door, number-plate</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>4</td>
<td>partition garage, metal-frame</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>5</td>
<td>gar</td>
<td>brick pilaster</td>
<td>0.1</td>
</tr>
<tr>
<td>6</td>
<td>metal mesh</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>7</td>
<td>door, window</td>
<td>0.1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

In [38-39] for some structures (courtyard for Nova Heliópolis and house lines for Flamengo), the ideal number of scales is calculated from the formula $n_{ideal} = 1 + \ln x_{max} - \ln x_{min}$, known as the values $x_{max}$ and $x_{min}$. In the case of the courtyard, as could be deducted, the ideal number is higher than the real one encountered on the site. In contrast, in the two lines of housing in Flamengo, the real number of scales is larger than the ideal one ($n_{real}-n_{ideal}=32.5$ for the first line and $27.9$ for the second one).

<table>
<thead>
<tr>
<th>site</th>
<th>typology</th>
<th>$x_{min}$</th>
<th>$x_{max}$</th>
<th>$l n x_{min}$</th>
<th>$l n x_{max}$</th>
<th>real</th>
<th>ideal</th>
<th>nreal-ideal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nova Heliópolis courtyard</td>
<td>0.1</td>
<td>50</td>
<td>2.3</td>
<td>3.9</td>
<td>4</td>
<td>7.2</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>Flamengo houses (1 line)</td>
<td>0.1</td>
<td>8.8</td>
<td>-2.3</td>
<td>2.2</td>
<td>38</td>
<td>5.5</td>
<td>32.5</td>
<td></td>
</tr>
<tr>
<td>Flamengo houses (2 line)</td>
<td>0.1</td>
<td>15.6</td>
<td>-2.3</td>
<td>2.8</td>
<td>38</td>
<td>6.1</td>
<td>30.5</td>
<td></td>
</tr>
</tbody>
</table>

The most significant results are found in [Table 4 and 5], wherein the scalar ratios are further studied. The relationship between two successive scales $k = x_{min} + 1/x_{min}$ is analysed across the hierarchical structure, starting from the two smallest scales ($k_{1-2}$) to the largest ($k_{18-19}$ in the case study of Nova Heliópolis, and $k_{38-39}$ in Flamengo). Then, each value of $k$ is compared with coefficient $e$, optimal distance between two successive degrees. The best result is found in Nova Heliópolis where, between the scale
x17 (six modules of block 1) and scale x18 (block 1), k assumes a value of 2.66, very close to ε. It means that the division into modules is proportionally balanced in relation to the length of the block; a denser or sparser division would cause a departure from the ideal coefficient ε. In turn, the relationship k13-14 between all the windows and the wall that contains them, is the worst of all; the absence of window frames, balconies and sills results in this lack of close scales.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Relation</th>
<th>1st</th>
<th>2nd</th>
<th>1st</th>
<th>2nd</th>
<th>1st</th>
<th>2nd</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1-2</td>
<td>2.00</td>
<td>2.00</td>
<td>40.00</td>
<td>M1-2</td>
<td>0.70</td>
<td>0.70</td>
<td>0.50</td>
</tr>
<tr>
<td>M2-3</td>
<td>1.52</td>
<td>2.00</td>
<td>2.53</td>
<td>M2-3</td>
<td>1.03</td>
<td>1.03</td>
<td>0.37</td>
</tr>
<tr>
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<td>4.60</td>
<td>M3-4</td>
<td>1.01</td>
<td>2.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M4-5</td>
<td>1.20</td>
<td>M4-5</td>
<td>1.50</td>
<td>M4-5</td>
<td>1.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M5-6</td>
<td>1.05</td>
<td>M5-6</td>
<td>1.60</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>M6-7</td>
<td>M6-7</td>
<td>M6-7</td>
<td>M6-7</td>
<td>M6-7</td>
<td>M6-7</td>
<td>M6-7</td>
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</tr>
<tr>
<td>M7-8</td>
<td>1.59</td>
<td>M7-8</td>
<td>1.50</td>
<td>M7-8</td>
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</tr>
<tr>
<td>M8-9</td>
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<td>M9-10</td>
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<td>M9-10</td>
<td>1.50</td>
<td>M9-10</td>
<td>1.50</td>
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<td></td>
</tr>
<tr>
<td>M10-11</td>
<td>1.37</td>
<td>M10-11</td>
<td>1.50</td>
<td>M10-11</td>
<td>1.50</td>
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</tr>
<tr>
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<td>M15-16</td>
<td>1.50</td>
<td>M15-16</td>
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<td>M16-17</td>
<td>1.50</td>
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<tr>
<td>M18-19</td>
<td>1.90</td>
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<tr>
<td>M21-22</td>
<td>2.55</td>
<td>M21-22</td>
<td>1.50</td>
<td>M21-22</td>
<td>1.50</td>
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</tbody>
</table>

In the case of the Flamengo favela, the proportionality between the elements has been found at small

<table>
<thead>
<tr>
<th>Tab. 4</th>
<th>Relationships between successive scales in Nova Heliópolis</th>
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</thead>
<tbody>
<tr>
<td>Scale</td>
<td>Relationship</td>
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</tr>
<tr>
<td>M1-2</td>
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<td>M16-17</td>
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<td>M17-18</td>
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<td>M18-19</td>
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<td>M19-20</td>
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<td>M22-23</td>
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<td>M24-25</td>
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<td>M25-26</td>
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<tr>
<td>M26-27</td>
<td></td>
</tr>
</tbody>
</table>
scales (self-construction), while it disappears for objects that increase in size and become less controllable (planned). The highest ratio was found within the central public space (k=20) where, between the square size and the elements width placed inside, no intermediate scales are noticed. Finally, the third step of data analysis predicted the computation of multiplicity distribution p of the elements in each scale, using the formula c = p*x^m (table 6 and 7). This operation allowed relating the scales with the elements frequency appearing in it. The presence of a scale in an environment, in fact, may have a more or less strong impact depending on the number of elements it contains (one, two or more elements). In general, a proportional decrease in the number of elements in relation to its size has been found in two case studies; this means, a lot of small elements and very few big elements, according to the power law given by Salingaros and other authors. However, it is interesting to note that in the case of the Flamengo favela, the multiplicity is much lower as compared with Nova Heliópolis. This result is because the slum scales are all different, unrepeatable, without repeated elements. Then, the difference between the values creal and cideal=constant e=2.7 was calculated. Here a marked difference appears between the two case studies. In the housing complex, the power law moves away from value e: the scale x12 (set of central windows) presents the greatest value of creal=170, due to a very high multiplicity (36) combined with a relatively large size scale (4.8m).

<table>
<thead>
<tr>
<th>n</th>
<th>scales</th>
<th>p</th>
<th>creal</th>
<th>cideal</th>
</tr>
</thead>
<tbody>
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<td>1</td>
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<td>1</td>
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</tr>
<tr>
<td>2</td>
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<tr>
<td>20</td>
<td>100</td>
<td>1</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

[tab. 6] Distribution of multiplicity in Nova Heliópolis
In the Flamengo favela, the results $c_{real}$, derived from the power law, are very close to the value of 2.7, due to a low multiplicity along with a small size.

**RESULT DISCUSSION**

The fieldwork and the subsequent data treatment here presented, aimed to assess a theoretically supposed hierarchical order, where urban elements are arranged in scales, according to certain proportions. The results offer much empirical data upon which it is possible to argue. The formulas, extracted from Salingaros studies, have taken shape within the Brazilian city of São Paulo, providing real meaning and content. The results are urban phenomena expressed mathematically. For reading each numerical result, it is important to consider the urban reality behind it, responsible for generating a certain value. The variability in numbers corresponds to variations in architecture, engineering and urban planning solutions of the studied landscape; as well as to social, economic and cultural reasons. The proportions and numerical ratios should not be treated as immutable results but rather as something easily changeable, resilient and sensitive to the factors expressed above, to the participation of people, to the political goals.

The computed numerical results show peaks and divergences between the two studies cases, so to raise the attention to the urban problem related to it. The first and more obvious result is the prevalence of people, to the political goals.

The computed numerical results show peaks and divergences between the two studies cases, so to raise the attention to the urban problem related to it. The first and more obvious result is the prevalence of people, to the political goals.
house line of the slum, a garage used as a small bar was noticed. The lack of space in front of this activity, meaning a good connection between the scale of street and the garage, prevents the full exploitation of the open space, limiting its use.

The calculation of $k = x_{n+1} / x_n$ has been very useful as a means of investigation, providing for each ratio of two scales a different variation which can be interpreted. Numerically, when two scales are too tight or too loose, it means that, spatially, elements belonging to these successive levels are, respectively, far away or very close. If they are too far apart, the elements cannot be considered as one, if they are too close, they can be confused and lose their recognizability. This is not just a visual problem. The distance between the two scales could be result in a physical separation, in a social segregation, in a dysfunction at a higher hierarchical level. While, excessive approximation might result in a forced proximity, a slowdown in mobility, a lack of available resources, in a personal intimacy loss, in a violent behaviour. In both of study cases, the computed proportion is often lower than the scalar constant $k = e$. This means that the distribution is very narrow; between any scale $x_n$ and its successive $x_{n+1}$, there is not an adequate range. To bring $k$ near $e$, it would be necessary to distance the scales in space, adopting a smaller discretization between the existing ones.

The latter considerations can be discussed from the third formula $p * x^m = c$, which involves the multiplicity indicator $p$, a measure of elements frequency in an $x$ size scale. This is the most complete formula, since it includes the question of scales and the distribution of elements within them. Once again, the closeness to $e$ should be measured. Analysing the case of housing in Nova Heliópolis, we find clear differences between $e$ and the real coefficients. This gap is mainly due to a very high number of urban elements for the size of the scale to which they belong. If two scales are considered very tight, the effect of this proximity eventually has a greater effect on the urban landscape if the scale is made up of the very urban elements that often occur in the space. This mathematical finding explains the lack of communication between the Nova Heliópolis residents and the housing complex under study, consisting of very large blocks repeated in space, really far from the smaller human scale. The difference between $c_{real}$ and $c_{ideal} = e$, on average, tends to disappear in the case of Flamengo, which seems to be the hierarchical structure closest to the ideal condition expressed by the formulas presented.

**CONCLUSIONS**

The present study conducted in São Paulo to analyse some urban hierarchical structure, could reveal many evidences about the proportions of its elements and their role in the urban space. Firstly, the scales were identified and the number of ideal levels that should belong to a place were computed. The use of constant $e$ allowed comparing the real computed results with an ideal situation. In one case, it was used to test the distance between two successive scales; in another case, $e$ was used to validate the proportion between the multiplicity of elements and the relative scales. About the scales ideal number, the results showed a public space scale inferiority compared to the built space, in both sites. This says a lot about the attractiveness of such areas in terms of social interactions. The last formula of multiplicity appears to be more useful than the others, both for the variety of factors involved and for the quality of results provided. Especially in Nova Heliópolis social housing area, it displays values of $c$ very far from $e$, therefore scientifically showing the presence of a number of great elements belonging to larger scales and too few elements in smaller scales, which should be far greater.
The application of the theoretical assumptions has offered the opportunity to test, in selected areas of São Paulo, a method of analysis that combines complex mathematical studies, urban issues, biology principles, architecture and engineering challenges. The choice of the sites of analysis was aimed at two places sharing the same precarious situation but with different morphological and urban features. For one of them, the existence of a poor structure in urban scales was hypothesized; for the other one, a rather rich urban hierarchical structure was considered. Both structures were analysed in shape and its morphological parts, facing the public space. The division into scales was obtained from measurements made in fieldwork. The three formulations described above were applied either in the built space, or in the empty space in the middle. The empty spaces are in both cases very poor in scale and do not converse with the constructed space surrounding them. In Flamengo’s favela, the central void is too large and disconnected from the two square constructed sides; empty space and built elements do not constitute a unitary place. In order to transform this void into a living and mixed use space, the introduction of intermediate scales that defines the perimeter, introduces new paths and link the central area with the surroundings is necessary. In Nova Heliópolis, instead, the problem is not the dimension but, mainly, the inactivity, the monotony and the scarcity of facades that enclose the perimeter of the yard. In addition, the space remains separated from the street a few meters away, no point of view onto other courtyards or connections with other scales occur. Since this model of social housing construction is still widely reproduced, the present study hopes to have shown the inadequacy of such architectural solutions to promote transformation and revitalization processes of vulnerable territories, without an intervention that takes into account the need to re-connect the fragments into which the suburbs territories were divided.

Thanks to the practical application in São Paulo, from a quantitative visual analysis, qualitative and perceptive considerations on the hierarchical structure were obtained, as a result of comparing between scales. The list of scale progression is very meaningful. The problem of transition among levels and boundaries between elements could be explored to achieve a condition of coherence and uniqueness between levels, which moreover could guarantee accessibility and functionality beyond. In general, the main contributions of the work are related to combining the theoretical approach and the real city; a creative adaptation of the hierarchical theory is proposed in the context of street, opening the way for a new, multiscale and interdisciplinary methodological path. In practical terms, divergent results and mathematical ratios far from proportions must be seen as an alarm bell and raise the attention. The next step lies in identifying what interventions and which urban actors may be involved in the transformation process of these factors. No doubt, a large amount of abnormal numerical relationships are related to the quality of the production real estate, the main creative force. Estate actors should take on the consequences that naked forms, inattentive to the empty spaces around them and with no finishing, generate on the urban experience quality, especially when it is prone to some phenomena such as segregation, drugs, violence. Despite this, being aware of the possibility to strengthen and complement by intermediate scales the existing hierarchy that ties all the elements, popular participation ceases to be considered a negligible and external force. It assumes powerful proportions when placed in a structured and integrated urban context, where individual efforts turns a global result. Citizen, in fact, is the common denominator at all scales, including those that apparently seem beyond its control. Future studies may be oriented to how popular participation can be directly involved in a creative process that attends the emergence of a local hierarchy, functional to neighborhood life, in harmony with the people who inhabit it.
REFERENCES


LA PRODUCTION D’ESPACES PUBLICS FACE AUX NOUVEAUX DEFIS MONDIAUX. CAS DE LA VILLE DE TIZI-OUZOU.

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ABSTRACT

Notre proposition s’intéresse aux villes de taille moyenne comme Tizi-Ouzou face aux nouveaux défis de la ville contemporaine marquée essentiellement par la mondialisation et les Nouvelles Technologie d’Information et de Communication (NTIC). Ces derniers ont eu un impact majeur en induisant des mutations profondes en particulier sur la forme urbaine et les espaces publics. Les espaces publics en particulier, subissent un double processus : d’un côté la patrimonialisation s’inscrivant dans le cadre des politiques de mise en valeur des centres historiques, dont l’objectif principal est de promouvoir le tourisme urbain, de l’autre côté, la privatisation par l’émergence de nouveaux types d’espaces publics produits par le privé mais destinés au public comme les espaces marchands et les espaces ludiques.

Cet article s’inscrit dans le cadre de la préparation de la thèse de doctorat et tente de cerner deux problématiques principales. La première, est d’ordre général, elle est liée aux mutations profondes urbaines subies par la ville contemporaine postmoderne engendrées par la mondialisation et la révolution technologique. La deuxième, il s’agit de mesurer l’impact de ce nouveau contexte mondial en pleine mutation sur une ville algérienne de taille moyenne comme Tizi-Ouzou, en particulier, l’impact sur la forme urbaine et les espaces publics. Atteindre cet objectif a nécessité dans un premier temps le recours à une investigation théorique portant sur les travaux ayant traité de ce sujet. Et dans un deuxième temps une approche empirique basée sur l’étude des textes juridiques et réglementaires, l’observation sur le terrain et les entretiens auprès des acteurs en rapport avec la production des espaces publics. Ainsi, notre objectif est de rendre compte du processus et du mode de production des espaces publics à travers l’histoire de la formation de la ville de Tizi-Ouzou dans un contexte caractérisé par la mondialisation et les NTIC.
KEY WORDS
Production; espaces publics; défi; Mondialisation; NTIC
LA VILLE CONTEMPORAINE EN PLEINE MUTATION

La ville contemporaine post-moderne a subi des mutations profondes et tente de faire face à des défis mondiaux importants. Ces derniers sont particulièrement liés à la mondialisation et au développement de nouvelles technologies. Certains, chercheurs spécialistes de l’urbain, comme Choay. F n’hésite pas alors, à annoncer «le règne de l’urbain est la mort de la ville»\(^8\). Pour décrire la nature de ces mutations, Portzamparc. C souligne que «pendant ce siècle, comme les fleuves qui débordent, les villes sont sorties de leurs cours. Elles se sont étendues, diluées, elles semblent même parfois avoir changé de substance»\(^9\).

De son côté Mongin. O s’est beaucoup intéressé au phénomène de la mondialisation et aux évolutions technologiques, en particulier leurs impacts sur la ville contemporaine. Il rapporte dans un premier ouvrage sur ce sujet, qu’au cours de ces trente dernières années la mutation de la ville s’est faite d’une manière brutale et qu’elle a été accélérée par des innovations technologiques majeures en particulier, les nouveaux modes de transports (TGV, métro rapide, avion, etc.) et les nouvelles techniques de communications (téléphone, informatisation, transmission instantanée des messages écrits, etc.)\(^10\). Dans un autre ouvrage, il considère que l’urbain généralisé et sans limites a succédé à une culture urbaine des limites et a permis l’émersion de nouveaux cas de figures de villes: ville monde, métropole, mégacité, ville globale\(^11\). Et dans un ouvrage plus récent il propose de prendre la mesure de l’ampleur des bouleversements en particulier les effets contrastés générés par la mondialisation urbaine et la révolution numérique. Pour comprendre l’urbain généralisé, Mongin suggère d’appréhender la place prise par les réseaux immatériels en affirmant que «tous les lieux sont désormais interconnectés par une mise en réseau virtuelle (la toile, le web) et réelle (les connexions matérielles) des flux que les nouvelles technologies de l’information et de communication ont rendu possible et ne cessent d’accélérer»\(^12\). Sur le plan de la production urbaine, il fait remarquer qu’il est difficile d’accorder un crédit à ce qui est produit depuis l’avènement de la mondialisation en matière d’aménagement urbain et architectural. Il considère que ces productions s’inscrivent dans une logique des politiques d’images (marketing urbain) et de compétition entre les villes, qui selon l’auteur «se polarise sur des morceaux de villes et privilégie trop souvent pastiche et copié-collé(...))\(^13\). Cependant, ces morceaux de villes privilégiés ne représentent pas toute la ville, les autres quartiers de la ville sont défavorisés et laissés pour compte, créant ainsi, un déséquilibre et un effet urbain et architectural contrasté. Par ailleurs, il considère que la ville des flux générée par la mondialisation et la révolution technologique se présente sous forme de trois dispositions spatiales distinctes\(^14\); - Les non-lieux - Ils relèvent du piratage et du brouillage de l’espace ; - Les hyper-lieux - Appelés aussi «ville vitrine globalisée» à l’exemple de Dubai avec ses gratte-ciels et les Malls commerciaux gigantesques, représentant l’hyper-urbanisme contemporain ayant généré la fragmentation; - Les milieux - Ils surgissent du monde virtuel à travers des échanges effectués par des contacts sur des réseaux sociaux (Internet, Facebook, Twitter) et se concrétisent par des rassemblements physiques pour devenir réel

\(^{13}\) Ibid., p. 22.
\(^{14}\) Ibid., pp. 131-146.
sur des places publiques faisant «milieu». Ce dernier devient un espace public commun hautement symbolique dans lequel se jouent la politique et la démocratie et parfois même l’avenir d’un pays (place Tahrir en Égypte, Taghir à Sanaa, Takssim en Turquie, etc.). Face à un constat qu’il qualifie de chaotique, il plaide pour relever le défi de réinventer une troisième ville (âge III) capable d’intégrer l’urbanité, l’impératif démocratique et reconquérir l’ordre architectural, urbanistique.

Quant à Ascher. F, il constate que depuis trois décennies, la ville contemporaine est entrée dans une « troisième révolution urbaine moderne» après celles de la ville classique et de la ville industrielle. Selon l’auteur, les villes changent alors, d’échelle et de forme et suivent un processus de métapolisation qu’il définit comme étant le résultat d’« un double processus de métropolisation et de formation de nouveaux types de territoires urbains (...) c’est-à-dire de vaste conurbations, distendues, et discontinues, hétérogènes et multipolarisées». Par ailleurs, il relève que la métapolisation au même titre que la globalisation a engendré un double processus, d’une part l’homogénéisation, du fait qu’on retrouve les mêmes acteurs économiques avec les mêmes logiques et dans pratiquement toutes les villes du monde ; et d’autre part, une différenciation, qui résulte de l’accroissement des compétitions entre les villes du même pays. Ascher. F identifie aussi, des transformations au niveau du système des mobilités urbaines avec des modes de transport performants, ainsi que l’émergence de nouveaux types de commerces (commerce électronique par Internet, commerce de loisir, grandes surfaces, etc.) engendrant de nouvelles structurations spatiales et l’apparition de multiples polarisations. Dans le domaine de l’urbanisme en particulier, il observe des changements qui touchent aussi bien le cadre bâti que les lieux publics (espaces publics) qui tendent à perdre leur urbanité et affiche son inquiétude face à l’émergence de nouvelles formes urbaines qui engendreraient des risques sur le plan social et environnemental. Il qualifie cette nouvelle manière d’intervenir sur la ville à travers des projets urbains basés sur des actions de marketing urbain de «nouvel urbanisme», tout en prenant le soin de rappeler que Le New urbanisme est né aux États-Unis et renvoie à trois types de pratiques: L’esthétique architecturale contextuelle souvent pâsliche et kitch; Le design urbain privilégiant un urbanisme de rues, d’espaces publics, de densités élevées; Et un mode d’urbanisation fondé sur des principes de mixité fonctionnelle et sociale, sur l’usage des transports publics et la lutte contre l’étallement urbain. À l’aune de ces mutations Ascher. F plaide pour relever le défi en appelant à réfléchir à un nouvel urbanisme basé sur des principes capables de répondre à la complexité urbaine tels que: le management stratégique, la souplesse, la négociation, la pluralité des acteurs, etc.

À ceci il y a lieu d’ajouter que la mondialisation et surtout les innovations technologiques ont permis l’émergence d’autres formes de villes appelées «Smart city» ou «ville intelligente». Elles sont les tendances les plus récentes en matière de mutation urbaine après celle de «la ville durable». La ville intelligente selon Picon. A «repose tout d’abord, sur l’usage intensif des technologies de l’information et de la communication. (...) . Sa construction renvoie à un certain nombre d’enjeux clef comme la possibilité de concilier qualité de vie urbaine et développement durable au moyen d’une gestion fine des ressources et des infrastructures techniques». Les exemples phares les plus cités ces dernières années sont Innovative City à Nice et Santander. En fait, la ville intelligente est un projet d’avenir en

16 Ibid., pp. 71-73.
17 Ibid., p. 75-78.
18 Ibid., pp. 69-70.
construction car, elle ne peut se limiter à l’utilisation de moyens technologiques performants. Ces derniers ne sont qu’un moyen permettant d’améliorer l’efficacité de la gestion urbaine. Le défi majeur de la ville intelligente n’est pas de remplacer la ville durable, mais plutôt d’accompagner la ville pour parvenir à la durabilité. Ceci est conditionné par une «participation intelligente» des citoyens à la gouvernance, devenue possible grâce aux moyens de communication performants comme l’Internet, Facebook, Twitter, Smartphone, etc.

Si la ville d’une manière générale à l’ère de la mondialisation et des innovations technologiques a subi des mutations profondes, l’espace public ou les espaces publics se sont aussi métamorphosés.

LES MUTATIONS DES ESPACES PUBLICS CONTEMPORAINS

Tout d’abord, il est important de rappeler qu’historiquement, les espaces publics sont considérés comme étant les fondements de la ville. Ils constituent des composants majeurs du paysage urbain et participent de ce fait à la construction de l’image de la ville, à la qualité de la vie urbaine et à la construction du lien social et de l’identité collective. L’espace public en tant qu’élément de permanence véhiculant la mémoire et l’histoire de la ville est à considérer aussi comme un patrimoine commun à tous. Ces espaces publics ont de tout temps véhiculé une valeur symbolique, et aujourd’hui bien qu’ils ont pris des formes différentes, ils sont devenus des enjeux économique, touristique et culturel de première importance pour la plupart des villes du monde.

Paquot. T souligne que «l’espace public (d’autres diront «sphère publique») et les espaces publics (d’autres les appelleront «espaces libres», «lieux publics» (...) et virtuels de la communication, «lieu urbain») ont subi de nombreuses et profondes modifications, tant de forme que de contenu, depuis leurs premières formulations». En effet, à l’ère de la ville contemporaine «post-moderne», marquée par les politiques patrimoniales, les politiques de décentralisation, la privatisation, la mondialisation et la révolution technologique, les espaces publics connaissent une mutation profonde sur le plan: sémantique, formel, du statut juridique, des usages et des pratiques sociales et aussi sur le plan du mode de production et de gestion. Ils subissent un double processus, d’un côté la «patrimonialisation» en particulier à travers la réhabilitation des espaces publics centraux s’inscrivant dans le cadre des politiques de requalification des centres historiques. Ces espaces «le plus souvent localisés dans des quartiers anciens ont subi le processus de muséification. Ils ont été transformés en zones piétonnes réservées exclusivement aux touristes, à la clientèle des commerces de luxe ou encore à des manifestations ludiques» ; De l’autre côté, la privatisation qui a permis l’émergence de nouveaux types d’espaces publics produits et gérés par le privé mais destinés au public comme les espaces marchands et les espaces ludiques. À ceci il y a lieu d’ajouter d’autres types d’espaces publics qualifiés de virtuels ou d’immatériels ayant émergés grâce aux innovations technologiques.

L’engouement pour la réhabilitation et la mise en valeur des espaces publics centraux va s’accroître à

La production d’espaces publics face aux nouveaux défis mondiaux

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partir des années 1990 notamment avec l’avènement de la mondialisation qui a induit le processus de métropolisation. C’est dans ce cadre que des grandes villes du monde telles que (Paris, Londres, Lyon, Barcelone, Berlin, etc.) ont développé des stratégies d’aménagement qui se fonde sur la réhabilitation et la mise en valeur des centres historiques à travers des opérations touchant les espaces publics en vue de développer le tourisme urbain. L’espace public devient alors, un enjeu majeur pour les acteurs locaux permettant le développement du tourisme culturel à travers l’organisation de différents événements et de festivités (la fête de la lumière à Lyon, les jeux Olympiques de Barcelone (1992) ou de Pékin (2008), Marseille, Capitale de la culturelle européenne (2012), la fête de la musique, etc.

En parallèle aux opérations de réhabilitation des espaces publics, la mondialisation et la privatisation vont permettre l’émergence de nouveaux acteurs privés devenus incontournables et qui vont investir dans la production de nouveaux types d’espaces publics tels que les espaces ludiques et marchands (parcs à thèmes, Disneyland, centres commerciaux, etc.). Cette privatisation des espaces publics née d’abord aux Etats-Unis avant de s’étendre à d’autres villes du monde a été qualifiée par certains chercheurs comme Soja. E et Davis. M, en se basant sur leur analyse de la ville de Los Angeles de «militarisation des espaces publics». En fait, la nature du régime capitaliste, les crises financières des pouvoirs publics, l’insécurité et l’incivilité des individus observées dans les centres villes (rues, parcs, …) et les quartiers périphériques souvent amplifiées par les médias sont autant de facteurs ayant poussé le secteur public à se désengager progressivement de la production d’espaces publics et par conséquent, incité le secteur privé à saisir l’opportunité de prendre le relais et d’investir dans des espaces marchands et ludiques rentables. Cependant, face à ces espaces produits dans le but d’attirer un maximum de clientèle d’une certaine classe sociale et exclusivement destinés à la consommation, on assiste en parallèle à une dévalorisation des espaces publics centraux. Cet état de fait est dénoncé notamment par Ghorra-Gobin. C en affirmant que «face au succès incontestable des espaces publics du secteur privé qui réussissent en fait à inscrire l’usager dans l’univers global de la consommation, les espaces publics traditionnels subissent un processus de dévalorisation pour ne plus être assimilés, grâce aux médias notamment, qu’à des espaces d’incivilité et de violence. Certains s’interrogent alors sur le devenir des espaces publics en tant que volet symbolique de la vie politique parce qu’ils représentent le support matériel d’une négociation permanente entre acteurs sociaux».

Si il est admis que l’urbanisme moderne a négligé la valeur des espaces publics en privilégiant la circulation des véhicules, avec l’avènement de la mondialisation et la révolution technologique on assiste à l’émergence de trois catégories d’espaces publics: l’espace public traditionnel réhabilité et mis en valeur que C.G.Gobin qualifie d’Espace Public Urbain (EPU) ; L’Espace Privé Ouvert au Public (EPOP), expression utilisée aussi par C.G.Gobin pour les distinguer des EPU; et aussi, l’Espace Public Virtuel (EPV), il s’agit, d’Internet, de Facebook, Twitter, etc. Ces différentes formes d’espaces publics en particulier les EPU et les EPOP vont changer considérablement le paysage urbain contemporain que ce soit sur le plan de la forme urbaine que sur le plan des usages et des pratiques sociales de l’espace, ainsi que leur mode de production. Sur le plan de la forme urbaine on observe un étalement sans précédent et en même temps la fragmentation engendrée par la localisation (centre, périphérie) et la spécialisation (tourisme culturel, commercial, ludique) des différents espaces publics.

Dans ce nouveau contexte urbain en pleine mutation les nouveaux espaces marchands et ludiques

25 Ibid., p. 6.
symbolisant la modernité et sans pour autant les diaboliser ne reflètent pas comme l’atteste la majorité des chercheurs (…) les véritables espaces publics (marché, rue, place, etc.) qui au contraire sont ouverts à tous sans aucune distinction et qui sont caractérisés par l’urbanité, la sociabilité, le vivre ensemble, sans oublier qu’ils revêtent aussi une dimension symbolique et politique. Dans ces espaces à la différence des espaces marchands et ludiques de statut privé les citoyens peuvent exercer pleinement la démocratie c’est-à-dire manifeste et s’exprimer librement. D’autres raisons confirment aussi cette différence; «la privatisation» des espaces publics ces espaces sont produits et gérés par le privé et ne sont pas ouverts à tous comme on le prétend du moment où les individus jugés indésirables ne sont pas tolérés. La publicisation des espaces privés, dès lors que ces espaces (marchands et ludiques) sont ouverts à un public diversifié pour un usage varié. La marchandisation Ils sont destinés exclusivement à la consommation et à la déambulation. L’universalisation ils sont produits de la même manière dans le monde et offrent souvent les mêmes produits de consommation (produits franchisés) permettant ainsi à l’individu d’accéder à la société globale de consommation, ce qui lui donne en fait, une sensation d’appartenir à une société universelle civilisée.

Cette évolution sémantique, le changement de statut juridique ainsi que les formes proposées ont dévalorisé les espaces publics centraux et leur ont fait perdre leur valeur symbolique de support de la vie politique, à savoir un espace où s’exercent en permanence les rapports souvent conflictuels entre les acteurs de la société civile et l’Etat. Ce constat est dénoncé par de nombreux chercheurs comme Ghorra-Gobin. C qui plaide pour «une réinvention d’espaces publics parallèlement à un discours en faveur de la construction d’une scène politique à l’échelle de la métropole»31, ou comme Laurence Liégeois L qui suggère de repenser les rapports complexes entre public/privé de façon à «créer des espaces publics pluriels pour des sociétés plurielles»32. Il ne s’agit pas là bien entendu d’un retour par nostalgie aux espaces publics traditionnels mais de relever le défi de repenser les espaces publics à l’aune du nouveau contexte urbain mondial en pleine mutation en impliquant tous les acteurs urbains en particulier les citoyens.

PRODUCTION DES ESPACES PUBLICS DANS LA VILLE DE TIZI-OUZOU

Tizi-Ouzou est chef lieu de Wilaya, située à 100 Km à l’Est de la capitale Alger. Elle est enserrée entre deux monts, le Belloua au Nord (650m) et Hassnaoua au Sud (600). Aujourd’hui, elle compte

environ 150 000 habitants. De par sa taille, sa population, son poids dans la région, son statut administratif, elle est considérée comme une métropole régionale. Depuis la formation des premiers espaces publics coloniaux jusqu’à aujourd’hui, ces espaces ont connu à travers le temps une mutation profonde qui a complètement métamorphosé le paysage urbain. La production des espaces publics dans la ville de Tizi-Ouzou est étroitement liée au processus historique de sa formation et de sa transformation. Un bref historique, est alors, nécessaire pour mieux saisir les enjeux et les défis d’aujourd’hui.

PRODUCTION DES ESPACES PUBLICS AVANT L’INDEPENDANCE (1640-1962)

Les premiers espaces publics à Tizi-Ouzou sont apparus au 16ème siècle durant la période de la colonisation Turque. Le Souk Sebt Ali Khodja, Tadjmaat et la Mosquée pour les hommes; la fontaine et le Hammam pour les femmes. Il est clair que ces espaces ne reflètent pas les véritables espaces publics traditionnels européens qui sont au contraire destinés et ouverts à tous sans distinction de sexe. Ce n’est qu’avec l’arrivée de l’armée française en 1855 que vont naître des espaces publics semblables à ceux de la ville européenne traditionnelle. Car Tizi-Ouzou, à l’instar des autres villes algériennes a été façonnée par les ingénieurs du Génie militaire français en se basant sur trois caractéristiques fondamentales à savoir: La régularité du tracé; L’importance donnée à l’aménagement de l’espace public; Et le traitement des relations entre les différents quartiers militaire, civil et indigène. Les ingénieurs du Génie avaient pour instruction de se concerter avec l’administration civile afin de «déterminer au mieux la localisation du marché, des promenades, des places, et des établissements publics». À Tizi-Ouzou, ils dessinent alors en premier l’espace public, un plan en damier, deux axes majeurs structurants, Nord-Sud (Cardo) et Est-Ouest (Decumanus) donnant ainsi, naissance à la place de l’église, puis positionnent les maisons et les édifices publics (mairie, l’église, l’école, etc.). C’est alors que la création du premier noyau colonial est officiellement décrétée en 1858. Après l’insurrection d’El Mokrani de 1871, l’armée française intervient, met fin à la rébellion et procède à la démolition de la partie basse du village Kabyle permettant ainsi au village colonial de s’étendre, ce qui lui permet d’accéder au statut d’une ville européenne. Jusqu’à la fin des années cinquante date qui correspond à l’avènement de l’urbanisme moderne, l’espace public a été «un élément structurant du plan d’ensemble» et un élément fondamental dans la formation de la ville coloniale. Durant cette période, une gare ferroviaire (1888), le téléphone est arrivée en 1904, une salle des fêtes (1921), un stade municipal (1925) et un marché couvert (1927), ont été entre autres réalisés. Vers la fin de la colonisation, Tizi-Ouzou devient préfecture et bénéficie du programme du plan de Constantine lancée par le Général De Gaulle en 1958. Ce plan «vise l’intégration de certaines couches de la population algérienne dans le système colonial, notamment par la création d’emplois réservés et le développement de la scolarité (…)».

33 Source: la Direction de la Planification et de l’Aménagement du Territoire a estimé en 2007 la population de la ville de Tizi-Ouzou à 144036 habitants.
34 Assemblée du village.
36 Ibid., p. 47.
37 Décret Impérial n 605 signé par l’Empereur Napoléon Jérôme le 27 octobre 1858.

PRODUCTION DES ESPACES PUBLICS APRES L’INDEPENDANCE (1962-2015)

Les premières années d’indépendance le pouvoir local avait pour défi d’asseoir la souveraineté nationale à travers la réappropriation des édifices et des espaces publics hérités, tout en optant pour l’achèvement du plan de Constantine et ce jusqu’à 1968. L’hôtel de ville est réaménagé en mairie, la sous-préfecture est transformée en résidence du Wali, l’église Saint-Eustache est démolie puis remplacée par une mosquée, un monument aux morts est érigé à l’emplacement du marché couvert de la place Malakoff, les places et les rues sont rebaptisées par des noms de martyrs de la révolution algérienne. À partir de 1971 et jusqu’à la fin des années 1980 un programme spécial a été dégagé pour la Grande Kabylie et a permis la réalisation de plusieurs projets ambitieux en s’appuyant sur les mêmes instruments d’urbanisme hérités (PUD, PCD, PMU). Une opération de rénovation urbaine sur l’axe principal du tissu colonial a conduit à la réalisation de trois bâtiments de style moderne comprenant des services et des logements aux étages supérieurs. Divers équipements administratif, commercial, socio-éducatif, culturel, touristique, sportif ont été aussi réalisés: une nouvelle mairie, une gare routière, les Hôtels Lala Khedidja, Belloua et Amraoua, une Piscine Olympique, un Supermarché «des Galeries algériennes», une maison de culture à l’emplacement de la prison, le stade du 1er novembre de 30 000 places, le Théâtre Kateb Yacine, l’aménagement du square 1er novembre et du jardin public Mohand Oulhadj, et bien d’autres équipements. Ceci marque le début d’une métamorphose du tissu colonial. À la périphérie de la ville de Tizi-Ouzou, un pôle universitaire et une ZHUN ont été également réalisés dans le cadre du PUD. Ce dernier qui découle d’une planification centralisée et linéaire montre ses limites et est remplacé en 1990 suite à des réformes politiques (multipartisme, démocratie) et économiques (libre marché) par de nouveaux instruments (PDAU, POS) qui en fait, correspondent aux SDAU et POS français.

Entre 1990 et 2000, Tizi-Ouzou a traversé une crise multidimensionnelle (politique, sécuritaire, économique et sociale). À l’instar des autres villes algériennes qui ont subi les effets de cette décennie noire liée au terrorisme, Tizi-Ouzou, a été en plus secouée par des événements tragiques (printemps berbère) au début des années 2000 qui ont complètement paralysé plusieurs projets. Durant cette période d’insécurité les lieux publics (salles de cinéma, jardins, etc.) sont désertés par les habitants en particulier les femmes et les couples. Ce n’est qu’à partir du milieu des années 2000 avec le retour de la sécurité et une embellie financière grâce aux recettes des hydrocarbures que les projets ont été relancés et que la fréquentation des lieux publics a repris de plus belle. Les réformes déjà engagées en 1990 ont permis la privatisation et la libéralisation du foncier. De nouveaux acteurs émergent alors
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notamment des investisseurs privés. Malgré un retard considérable ces derniers en s’inspirant des pays occidentaux vont investir dans la production de nouveaux espaces publics marchands et ludiques, mais aussi dans les nouvelles technologies de communications (Internet, Cybercafés, téléphonies mobiles, etc.). C’est ainsi qu’à Tizi-Ouzou un privé a créé en 2009 le premier Parc de loisir et d’attraction «Thamaghra45» offrant plusieurs activités: un parking à étages, 03 piscines, deux salles des fêtes, une médiathèque, un hôtel, des espaces de consommation, une patinoire, un manège composé de onze attractions, etc.). Un autre privé, a ouvert en mai 2014 un centre commercial au carrefour du 20 avril, comprenant, un parking souterrain, un Hypermarché, des restaurants et cafétérias, des boutiques de luxe, des magasins d’opérateurs de téléphonies mobiles (Mobilis, Djezzy, Ooredoo). Deux supermarchés (Dylia Market, Univer Family)46 ont été aussi créés en 2015 à la périphérie de la ville par des investisseurs privés, ainsi que plusieurs superettes implantées dans les différents quartiers de la ville. Un centre commercial de niveau international (Ardis) est également prévu dans la localité de Fréha à une vingtaine de Kilomètre du chef-lieu de Tizi-Ouzou. À ceci il y a lieu d’ajouter des espaces de consommation notamment des restaurants avec des aménagements et des décors de style moderne, dotés d’enseignes lumineuses attrayantes portant des noms universels (Mystic, Capri, Mc Ben, Tizi Lunch, etc.) ainsi que des magasins d’habillement (RG, Celio, Pimkie, Morera, etc.) et des boutiques de cosmétiques et de parfumeries (Yves Rocher, Garnier, l’Oréal, etc.). En fait, ces derniers proposent des produits importés de l’étranger (franchisés). Ainsi, nous pouvons déduire, que ce nouveau paysage qui tente d’imiter le monde occidental révèle une aspiration et une volonté d’accéder à une société moderne globalisée.

Par ailleurs, dans le cadre de la politique de la ville47 un programme d’amélioration urbaine48 a été lancé en 2007 visant l’amélioration des conditions de vie des populations en redonnant à la ville une meilleure harmonie et cohérence de son urbanisme, à travers des actions qui portent sur la viabilisation de la voirie, l’AEP, l’assainissement, l’éclairage public, l’aménagement des espaces publics, etc. L’hôtel de ville de l’époque coloniale est alors réhabilité en musée, les différentes places publiques de la ville sont aussi réhabilitées, et de nouvelles places ont été créées, comme la place de l’olivier (Matoub Lounes) à l’emplacement de l’ancien souk de Tizi-Ouzou. Dans cette place symbolique les citoyens ont souvent manifesté pour exprimer leurs joies ou leurs mécontentements vis-à-vis des pouvoirs publics. Des expositions nationales de produits de l’artisanat sont aussi organisées par la CAMTO49 sur ces lieux. À côté de la place de l’olivier, l’ancienne gare routière est aussi réhabilitée en place publique (Mbarek Ait Menguelet), qui depuis son ouverture (2014) est très fréquentée par les citoyens en particulier durant la période estivale et surtout le mois de Ramadan où des soirées ramadanesques sont organisées chaque jour. Ces dernières places débouchent sur un carrefour situé à l’entrée ouest de la ville où est érigé en son centre un monument aux morts ayant la forme symbolique d’une bougie qui s’allume la nuit. En fait, ces récents aménagements ont été réalisés avec ardeur à l’approche de la célébration du 50ème anniversaire de l’indépendance (05 juillet 2012). Aux alentours de ce carrefour qui connait une mutation radicale, plusieurs projets ont été réalisés (palais de justice, la maison de l’environnement, Direction de la DLEP50, l’ENIEM51, la Banque d’Algérie, etc.) et d’autres

45 Termé Kabyle qui désigne la fête. Ce parc peut être visité sur le site Web: www.thamaghraparc.com.
46 Ces deux supermarchés peuvent être consultés sur internet.
47 Loi d’orientation de la ville n 06-2006.
49 Chambre de l’Artisanat et des Métiers de Tizi-Ouzou.
50 Direction du Logement et des Equipements Publics.
51 Entreprise Nationale des Industriels de l’Electroménager.
en cours de réalisation comme le musée régional et le nouveau siège de l’APC\(^{52}\). À ceci il y a lieu d’ajouter l’inauguration d’une radio locale Kabyle le 1\(^{er}\) novembre 2011 ainsi que le lancement du projet d’un téléphérique au cours de l’année 2015 qui permet de relier la Gare multimodale\(^{53}\) (Kef Anaadja) située sur la rocade sud, au mausolée du belloua (650m d’altitude) en passant par plusieurs stations: mosquée de la nouvelle ville (ZHUN), le stade 1\(^{er}\) novembre, le CEM Babouche et l’hôpital Sanatorium.

Enfin, dans le cadre de la politique du gouvernement, la Direction Opérationnelle des Télécommunications (DOT) d’Algérie télécom (AT) de Tizi-Ouzou tente de relever d’autres défis afin de se mettre au diapason avec la mondialisation en lançant l’année dernière (02 mai 2014) la nouvelle offre d’internet (4G LTE)\(^{54}\) à l’occasion de la célébration de la Journée mondiale (17 mai) des télécommunications et de la société de l’information. Il y a lieu de signaler aussi que suite au décret\(^{55}\) exécutif d’attribution de licences d’établissements d’exploitation de réseaux publics de télécommunication mobiles de troisième génération (3G+) et après validation de l’ARPT\(^{56}\) trois opérateurs (Mobilis, Djizzy, Ooredoo) ont depuis janvier 2014 lancé ce nouveau produit commercial en offrant de nouveaux services aux abonnés comme l’internet haut débit, la visiophonie et la vidéo en streaming. Et plus récemment encore (juin 2015) un service ‘’Wici’’ qui en fait correspond à Wifi dans ce système à l’ensemble des placettes, lieux et jardins publics de la ville de Tizi-Ouzou. Ainsi, Tizi-Ouzou est en passe de devenir une société branchée au même titre que les sociétés occidentales. Elle s’est très vite adaptée à ce nouveau contexte mondial d’hypertexte, et l’hyperconnection en utilisant les dernières générations de téléphone mobile comme les tablettes, les Smartphones, les Iphones, etc.

Au terme de cet article, nous pouvons dire qu’à Tizi-Ouzou nous assistons au même titre que les villes occidentales à une mutation profonde caractérisée par un étalement urbain tout azimut induisant parfois des conurbations. Nous avons également constaté la production de trois catégories d’espaces publics à savoir des espaces publics physique et matériel à travers la réhabilitation et la création de nouvelles places publics, des espaces produits par le privé et destinés au public comme le parc Thamaghra et les centre commercial Rahma, et des espaces virtuels comme l’internet, les Smartphones et les tablettes qui sont issus des dernières prouesses technologiques. Ces différentes actions et réalisations récentes ont eu un impact majeur sur le paysage urbain. Il faut dire que les nouveaux moyens de communication en particulier l’internet, et aussi la télévision à travers les chaînes satellites ont grandement contribué à bousculer les mentalités et changer le mode de vie des citoyens. Ces réalisations révèlent également, que malgré les nombreuses difficultés rencontrées, et malgré que les moyens alloués à la commune très dépendants de la rente pétrolière ne sont pas à la hauteur des ambitions et des enjeux actuels, Tizi-Ouzou tente tant bien que mal de relever le défi de se mettre au diapason de la mondialisation et des nouvelles technologies. Enfin, en dépit de ces réalisations ambitieuses et prometteuses d’un avenir prospère, les défis qui restent à relever sont encore plus grands, notamment en matière de développement durable et de bonne gouvernance qui exigent plus de décentralisation, de démocratie et de participation citoyenne. Le défi à relever réside aussi dans le

\(^{52}\) Assemblée Populaire Communale.

\(^{53}\) Cette gare multimodale a été mise en service le 18 juillet 2011.

\(^{54}\) Long Term Evolution.

\(^{55}\) Journal Officiel de la République Algérienne Démocratique et Populaire (JORADP): n° 60-213.

\(^{56}\) ARTP: Autorité de Régulation de la Poste et des Télécommunications.
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domaine de l’urbanisme, car les instruments d’urbanisme en vigueur (PDAU et POS) sont dépassés et obsolètes et ne s’adaptent pas à la nouvelles réalité urbaine mondiale complexe, d’où l’urgence d’engager de nouvelles réformes permettant comme le suggère Ascher.F de réfléchir à un nouvel urbanisme adapté au nouveau contexte mondial en pleine mutation.

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