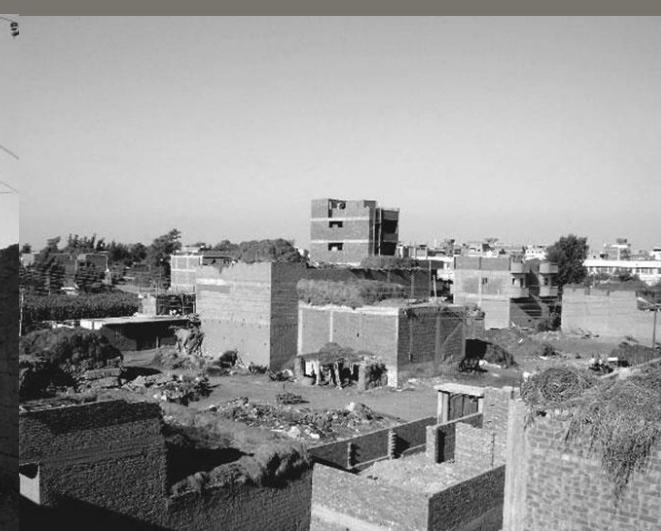
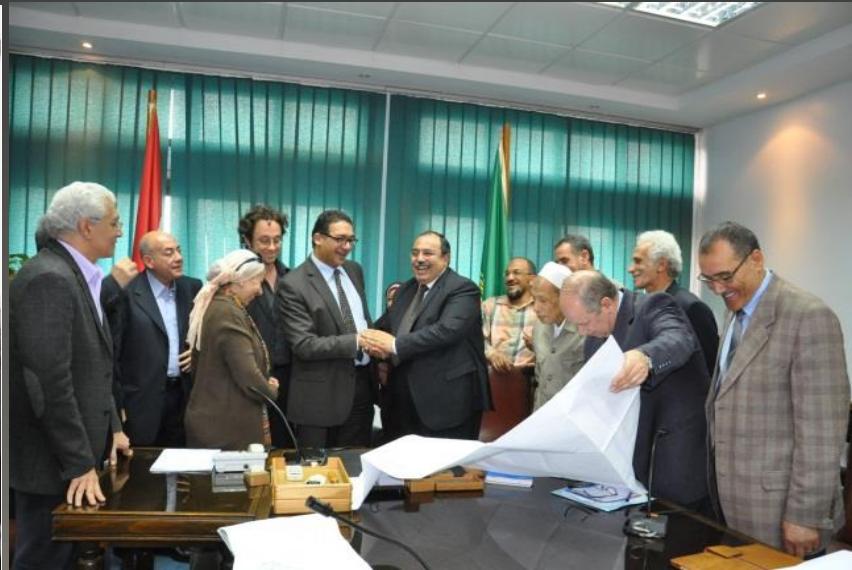


Rethinking Urban Sustainability Transitions on land readjustment in Egypt



1- Introduction

The main objective is

The research aims to open an academic discussion on theory and practice of sustainability transitions and **its correlations in land Readjustment (LR) for urban expansion in Egypt.**

It concludes that :

- The configuration, interrelation, and integration of LR within sustainability transitions perspective would enhance the continuous sociotechnical and political transitions in the Middle East region.

The research assumes that:

- Linking between a socio-technical transitions process and LR, would result on a proper sustainable land development.



2- The rapid urbanization and Urban Expansion in Egypt

- Egypt is suffering *from spontaneous, rapid informal urbanization, and the conversion of agricultural land into urban uses* which became the fertile arena for the urban informality.
- *Between 1982 and 2004, an estimated around 0.5 million hectare of agricultural land has been destroyed for urban use.*
- As of 2007, there were an estimated 8.5 million informal housing units with at least 21.2 million Egyptians live in urban areas.
- *In 2016, more than 50% of urban and rural agglomerations in Egypt are informal.*
- *If the current trend of population growth continued, with a population growth rate of 1.8% Egypt's population will reach more than 173.8 million by the year 2050.*
- *This would lead the need for at least between a half to two thirds of the current urban and rural agglomerations to be added to the Egyptian territory till 2050, or to construct around 30 new cities with a population of 2.5 million each, to absorb the future population growth.*



Various devices for land delivery system through institutional, economic and social policies .

Community Institutions **Government & Professionals Institutions**

land is central to economic development

Process of land development

Virgin land

Peri-urban land

Urban informality

Semi-informal areas

Organized Areas
Formal areas

Costs of the legal system as the primary factors pushing people into extralegal existence

Peri-urban areas as a marginal component and a generator of economic growth, political change, information technology, and social transformation

"Peri-urban" land has become a fairly secure, convenient, and inexpensive option for obtaining housing plots

The poor relied mainly on their own potential action and their social networks

What is needed?

Enhancement of institutional, economic and social policies as a driving seat for improving land tenure system and accelerating land delivery system



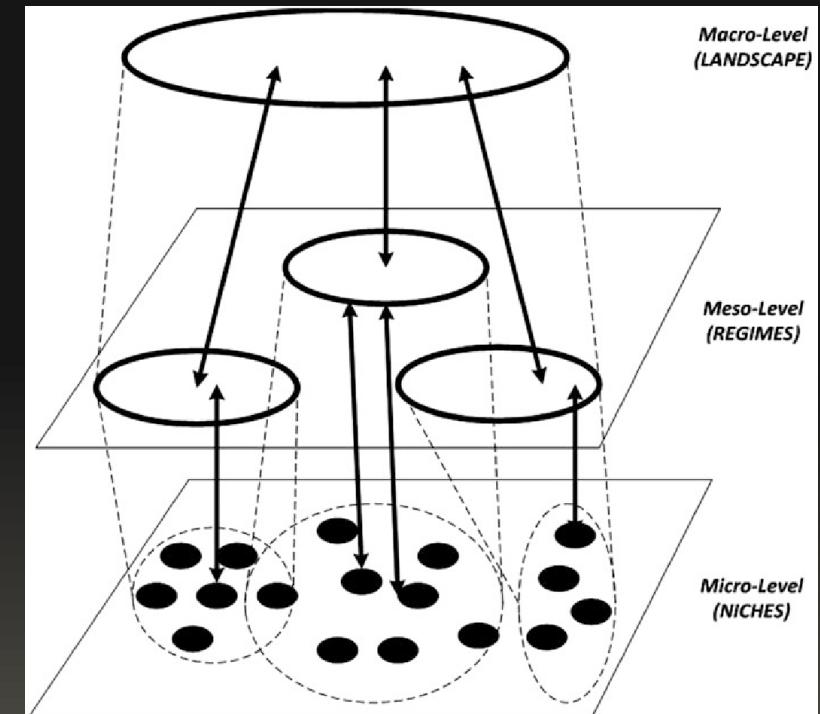
4- Sustainability transitions and urban expansion

□ In recent years, planning innovations have taken place aiming at sustainability transitions for the future of urban agglomerations development on the planet (Grin, 2010).

□ Transitions is a shift from one condition to another whereby the human species goes about organizing equally the consumption, production, and distribution of human, natural, and other resources among a society.

□ As Illustrated in Figure (1) Grin defines *the three levels in transition dynamics*: (1) *relational power* at the level of **niches**, (2) *dispositional power* at the level of **regimes**, and (3) *structural power* at the level of **landscapes** (Grin, J., et al. 2010)

Figure 1: The MLP process and its levels.



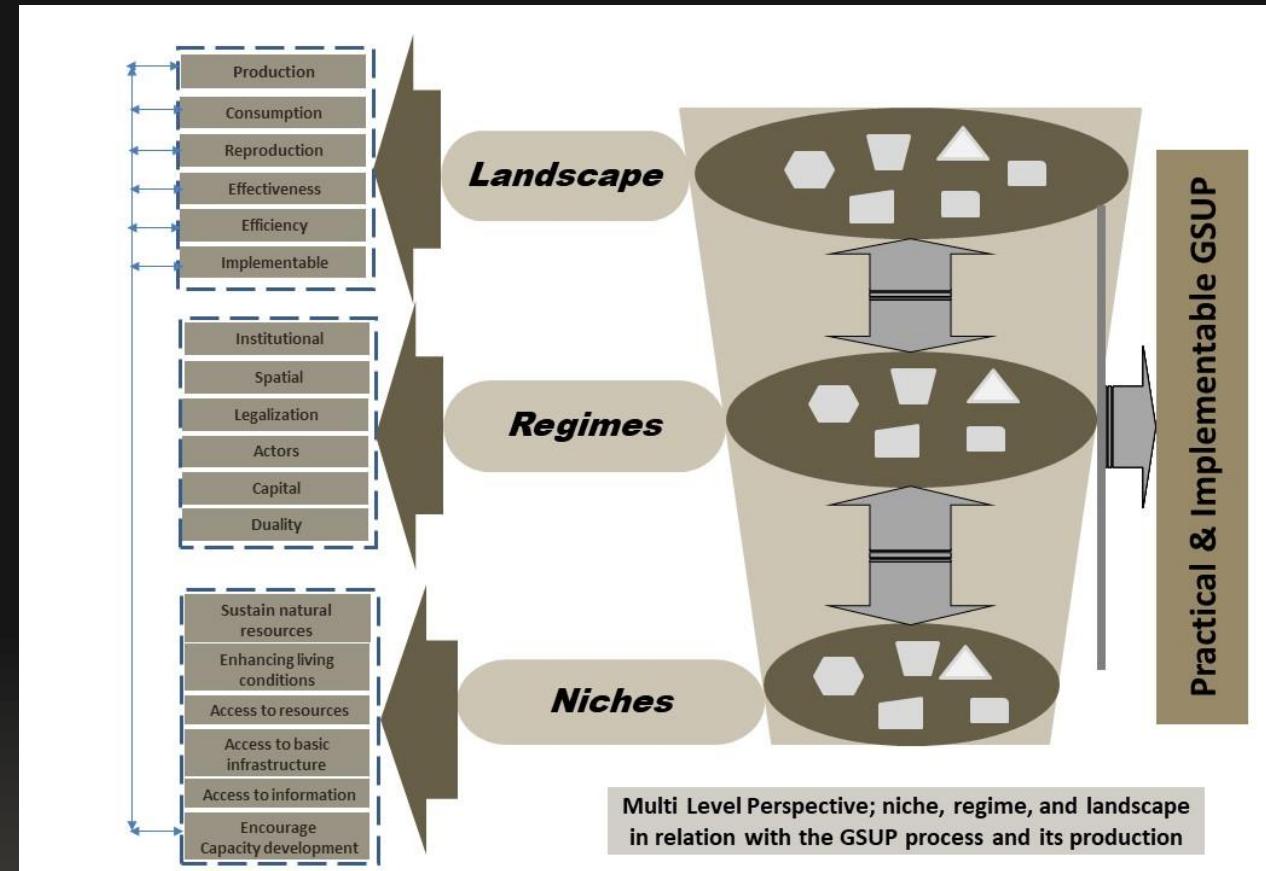
Source: (Geels and Schot 2007) The multi-level perspective of sustainability transitions



The sociotechnical perspectives and the Local Consultants Team (LCT) have facilitated the dynamics and development processes of the LR in three distinct ways.

- **First, at the niche level, the LCT have supported technical experimentation activities by providing direct technical support to local niche-level experiments to demonstrating the economic viability of such experiments. The niches are constituted main parts of the production of LR with various tensions of the duality or dual actions towards the niches processes.**
- **Second, at the regime level, the LCT may provide policy advice, technical assistance, know-how, and institutional support through training, capacity-building, techno-economic appraisals, and to government agencies and other key regime-level actors.**

Figure 1: illustrates the Multi-level perspectives.



Source: The author analysis after Grin et al. 2010

- **Third, at the landscape level, LCT have supported pieces of local knowledge experimentation activities by providing direct know-how support to specific landscape-level experiments.**



4-2 *The niches processes*

The niches processes followed the planning principles that would lead into steps to the following stages. These implicitly entail that interventions are constructed to proceed in a nonlinear fashion, involving a step-by-step series of activities from experimentation to arrive into concrete and measurable outcomes.

Experimentation refers to collective search and exploration processes in which a broad suite of stakeholders and actors from government and civil society are navigating, negotiating (and ideally) reducing uncertainty about new sociotechnical innovations. The real-world experiments are gaining knowledge and experience along the way in an iterative learning-by-doing and Doing-by-learning iterative process (Ansell, C. K., & Bartenberger, M. 2016).

Three main operational principles/criteria were introduced by the LCT: ***Do No Harm, Do Good and Act legally***. By providing a space to negotiate problem definitions and understandings, claims to resources, authority or dominant ideologies, experiments restructure the local institutions and through that have the potential to contribute to deep-structural change, i.e. sustainability transitions (Hodson, M., Geels, F. W., & McMeekin, A. 2017).

Three outcomes were reached at niches levels: spaces for future housing plots, spaces for economic activities and social amenities, and finally, spaces for infrastructure to cope with the current and future needs. Intensive negotiations processes between various stakeholders and the LCT were relied on three strategies of niches: ***Establishing, Translation, and Scaling***



3- A Brief Background of LR

The concept of LRP, participatory inclusive process, PLaR, **is win-win process.**

- ❑ LR is return back in 1791 by George Washington.
- ❑ The origins of LR established in Germany that are often attributed to the 1902. German legislation was translated into Japanese and adapted in “the 1919 City Planning Act (Archer 1989; Soliman 2014; Turk 2008)
- ❑ . In the Middle East countries, the British administration applied it in Palestine in the 1921 Town Planning Ordinance LR provisions (called ‘parcellation’).
- ❑ After the end of the civil war in Lebanon (1991), the city center of Beirut (Solidere) was extremely fragmentation of property rights. LR was introduced to redevelopment the city center.
- ❑ LR has shown its value for the servicing and subdivision of urban-fringe landholdings.
- ❑ This mechanism also reallocated lands with project costs and benefits that are equitably shared between and among landowners.



4- Differences between LR and Detailed Plan

Challenges	Land readjustment	Detailed Plan
Spatial	<ul style="list-style-type: none"> It determines road network, housing blocks, land plots, and various services in the plan. Lack of cadastral maps of the status quo of urban expansion areas. The status of the new added urban expansion areas is completely differed than what the scheme has been adopted for the GSUP. All the processing of land transaction is taking into consideration. Landlords are prepared to handle land documentation to declare their own properties. It gives the flexibility for urban planner to innovate a good planning scheme. It could be applied in areas with scattered buildings 	<ul style="list-style-type: none"> It determines road network and housing blocks and does not allocate land plots. Does not take into consideration the actual situation on the ground. The mismatch between the property lines, the current territory boundary and registered/ or nonregistered land documentations. Fragmentation of agricultural property by which is creating many obstacles to trace a land transaction, and the implementation of the project on the ground. The difficulty of inferred the real landowners and various official documentation of land tenure It is a rigid process as it limits the planner with agricultural land subdivision It is difficult to apply in areas with scattered buildings
Institutional	<ul style="list-style-type: none"> It must be within the official approved Hayez of the city It is a finished product by which each landlord could apply for a building license. It is Win-Win process by which it takes into consideration the smallest land plot The land sharing could be applied 	<ul style="list-style-type: none"> It must be within the official approved Hayez of the city It is an unfinished product in which land subdivision project should be applied to the property registration department. It is a Winer-loser process Difficult to apply land sharing
Legalization	<ul style="list-style-type: none"> According to PBL119, the responsible consultant has to obtain the consent of the landlords of the project. It is facilitated the Planning and Urban Development departments in the governorates to proceed with the final accreditation procedures. It is fulfilling the interpretation of the PBL119 for the definition of land subdivision and how to deal with. The ability to agree with the landlords to allocate land for the needed services according to PBL119. 	<ul style="list-style-type: none"> It is not necessary to obtain the approval of all the landlords. The inability of the Planning and Urban Development departments in the governorates to proceed with the final accreditation procedures. Inability in the decision-making in the adoption of detailed plans measures as stated in the PBL119. Inability to make decisions on the needed services that could be inside/or perimeter-scale of the DPUEA



5- A possible paradigm on urban sustainable transitions on land readjustment.

- ❑ *This research focuses on two areas. El Khargha area is in Sammanoud city, as a small city. The other is El Rezqa area in Banha city, as intermediate city, which is located 45 kilometers north of Cairo, the capital of Egypt. The former implemented in 2008, the latter in 2016.*
- ❑ Both projects have relied on Urban Sustainability Transitions in which relied on **a sociotechnical approach using the Multi-level (ML) perspective** and hidden potential actions of local communities who are living in the two areas, as a cooperation/participation process among the urban poor and official institutions (Soliman, A., 2020).
- ❑ Both projects introduced Participatory and Inclusive Land Readjustment (PILaR) as a tool that enables cities to significantly increase the supply of serviced land at the urban fringe.
- ❑ Both projects have implemented as an innovation tool to control the arbitrary development of peri-urban areas on the periphery of the two cities (Soliman, A., 2010; 2012; 2017).



5-1 PLANNING PRINCIPLES

A set of basic principles has prioritized the following five values; transparency; equity; trust; credibility; and efficiency

This had led into four tasks intersected at the niche and regime levels with various pathways: What is needed? Who will do the Task, Who will be responsible for the end product? How will overcome the current urban challenges?

□ It was through these values that the Local Consultant Team (LCT) was able to establish a sort of social network, and building bridge of trust between landlords that would enhance participation to reach a sort of compromise among them.

Accordingly, a communal principles among all landlords was emerged as follows:

- All landlords would give up the same percentage of their land for roads and services according to the BPL 119.
- In reassigning a plot of land to a landlord, the LCT would do its best to make sure it would be at the closest physical proximity as that of the landlord's original site.
- The TT would also respect any specific advantages that a parcel had and make sure the "new parcel" provided for those advantages.
- The minimum street's width will be 10 meter.
- The minimum land parcel's size will be 120 square meter.
- In the case that land parcel's size is less than 120 square meter, the landlord will reimburse his exact land size in another land plot to be shared with other.

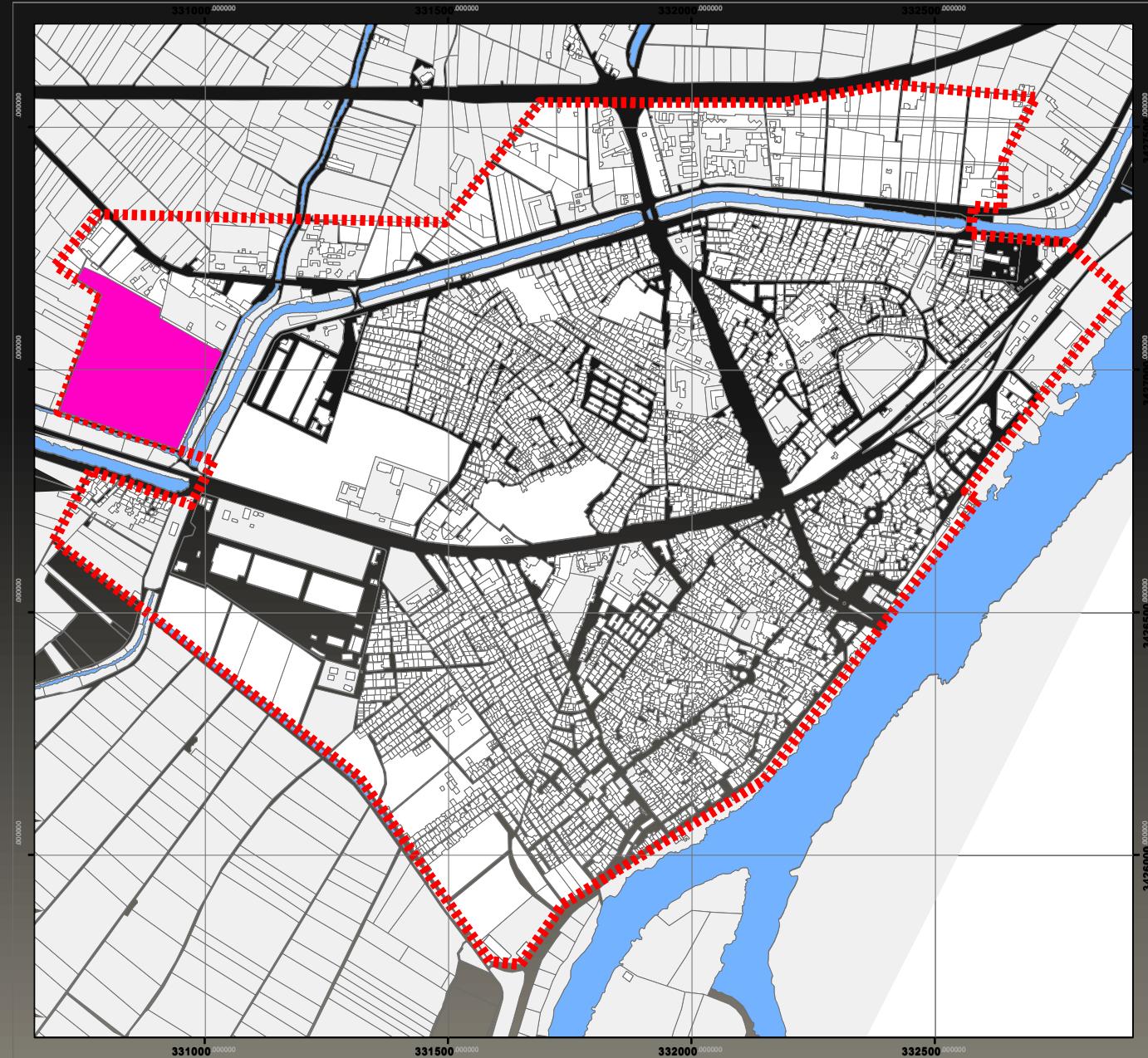


Tasks	What is needed?	Who will do the Task	Who will be responsible for the end product?	How to overcome the current urban challenges?
(Pathways)	(Niches)	(Niches)/(Regimes)		(Landscape)
Field Survey & identifying site characteristics	Collecting necessary data & documentation	LCT and stakeholders	LCT and stakeholders	Accurate information, cadastral maps, and GIS maps
Site formalization	Tracing land transaction and conversion	Stakeholders, Local municipality, and government agencies	The GOPP and local municipality	Change land uses from agriculture into residential use
Building basic principles/criteria	Do No Harm, Do Good and Act legally.	LCT and stakeholders	LCT, the GOPP, and local municipality	Building a bridge of trust based on Transparency, accountability, responsibility
Setting up various scenarios	Borrowed the residents' initiative	providing a space to negotiate between LCT and stakeholders	LCT and stakeholders	Are there any technical issues or obstacles to be solved before starting the project?
Designing the layout pattern	Residents' participation	A committee from the LCT and stakeholders	A committee from LCT local municipality and stakeholders	Build a sort of partnership between stakeholders and local municipality
Cost recovery	Fees to be paid by the residents and local municipality	Beneficiaries/ local municipality	Local municipality and stakeholders	Avoiding the project deficit and ensuring that the urban poor are included in the site
Tenure security	Simplifying land registration	Local municipality and government agencies	Local municipality	Secure land tenure, and simplifying procedures for land registration
Providing land plots and housing units	Land subdivision according to the agreed layout pattern	People who own land and residential buildings	Local residents and local municipality	Increase housing production and facilitate land delivery system
Monitoring the progress of the project (Learning by doing and doing by learning)	Providing day-by day data	Nominee from stakeholders and the consultants	Technical team and local municipality	Major effects on poverty reduction

5-2 El Khargha Area

The total size is 16.44 Faddan. In 2008, it accommodated 1,530 persons

- ❑ It offered 357 land plots with total 1,377 housing units to accommodate 4284 persons till 2027.
- ❑ The estimated cost was around 96.39 million EL to be covered by the residents. While the infrastructure cost around 1,522 million EL to be covered by the governorate.



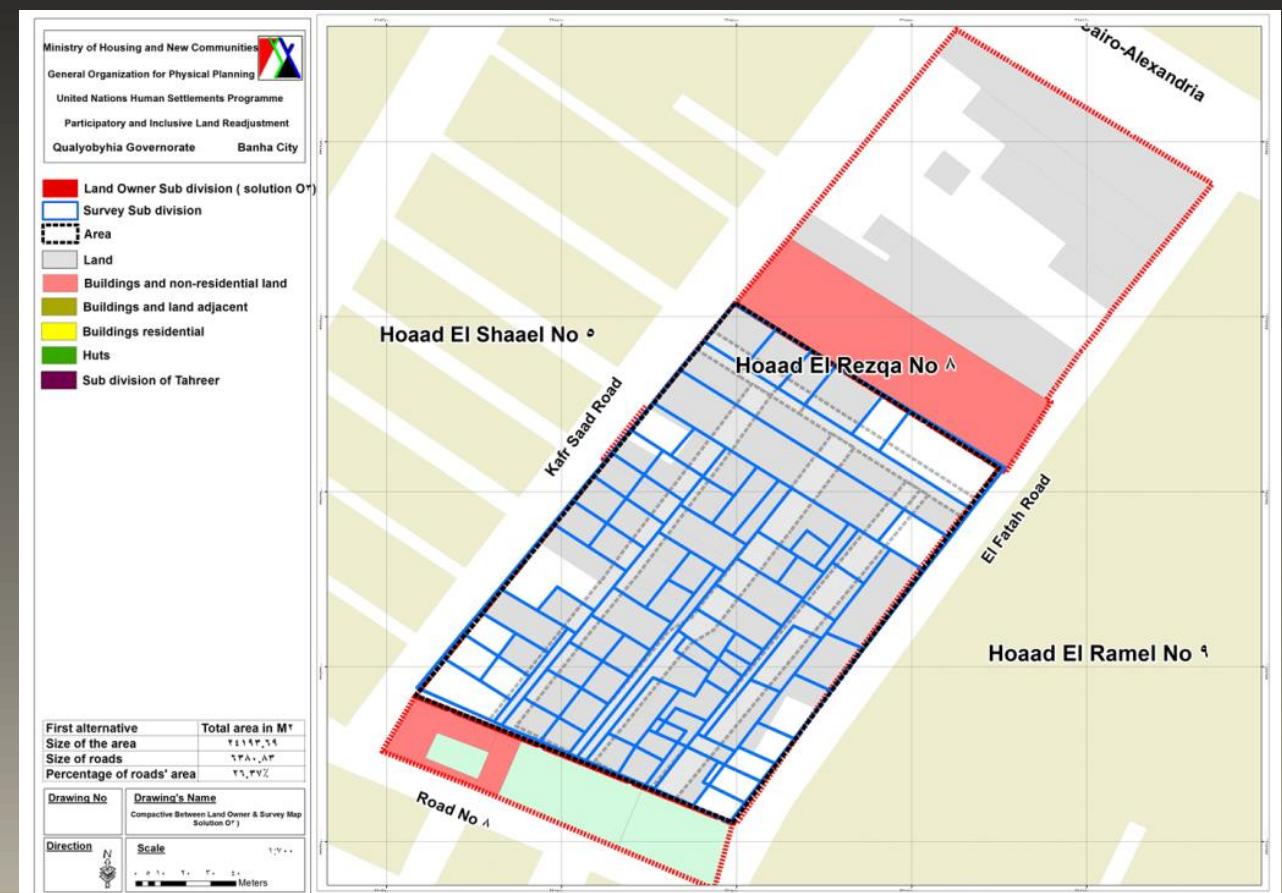
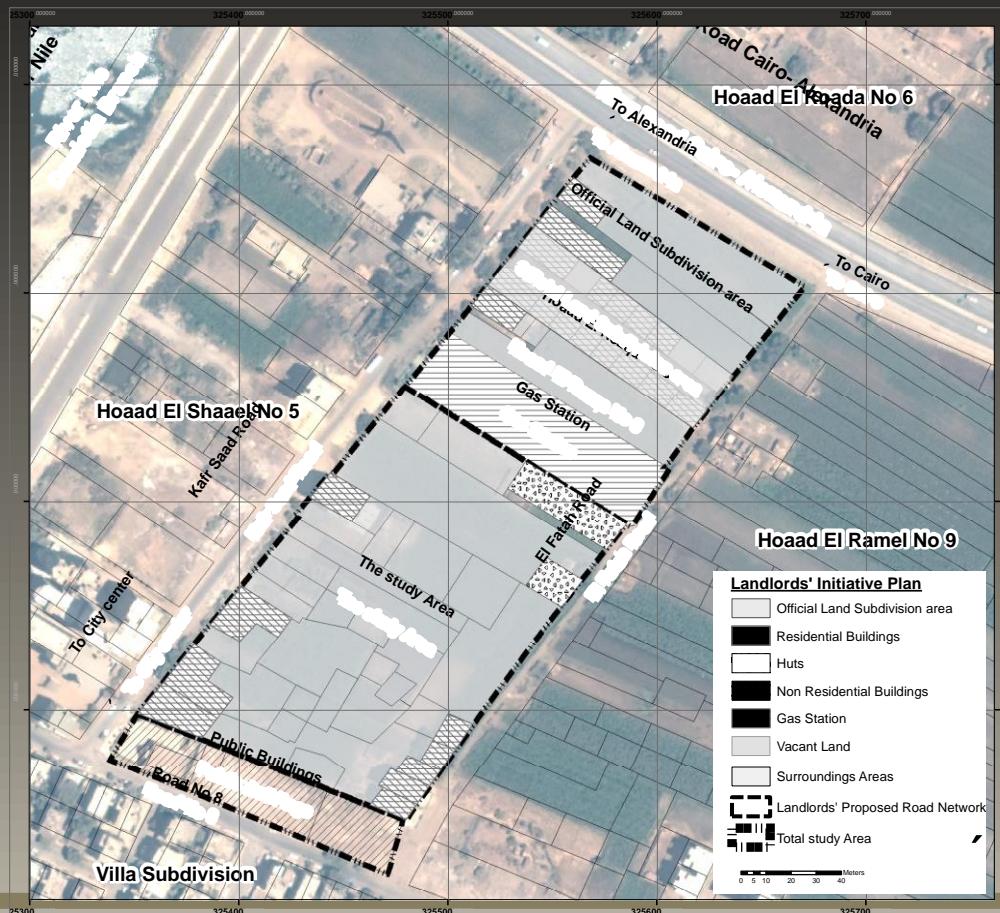
مشروع منطقة الخارجة - مدينة سمهود



5-3 Banha Case

The LCT had three tools presenting different information:

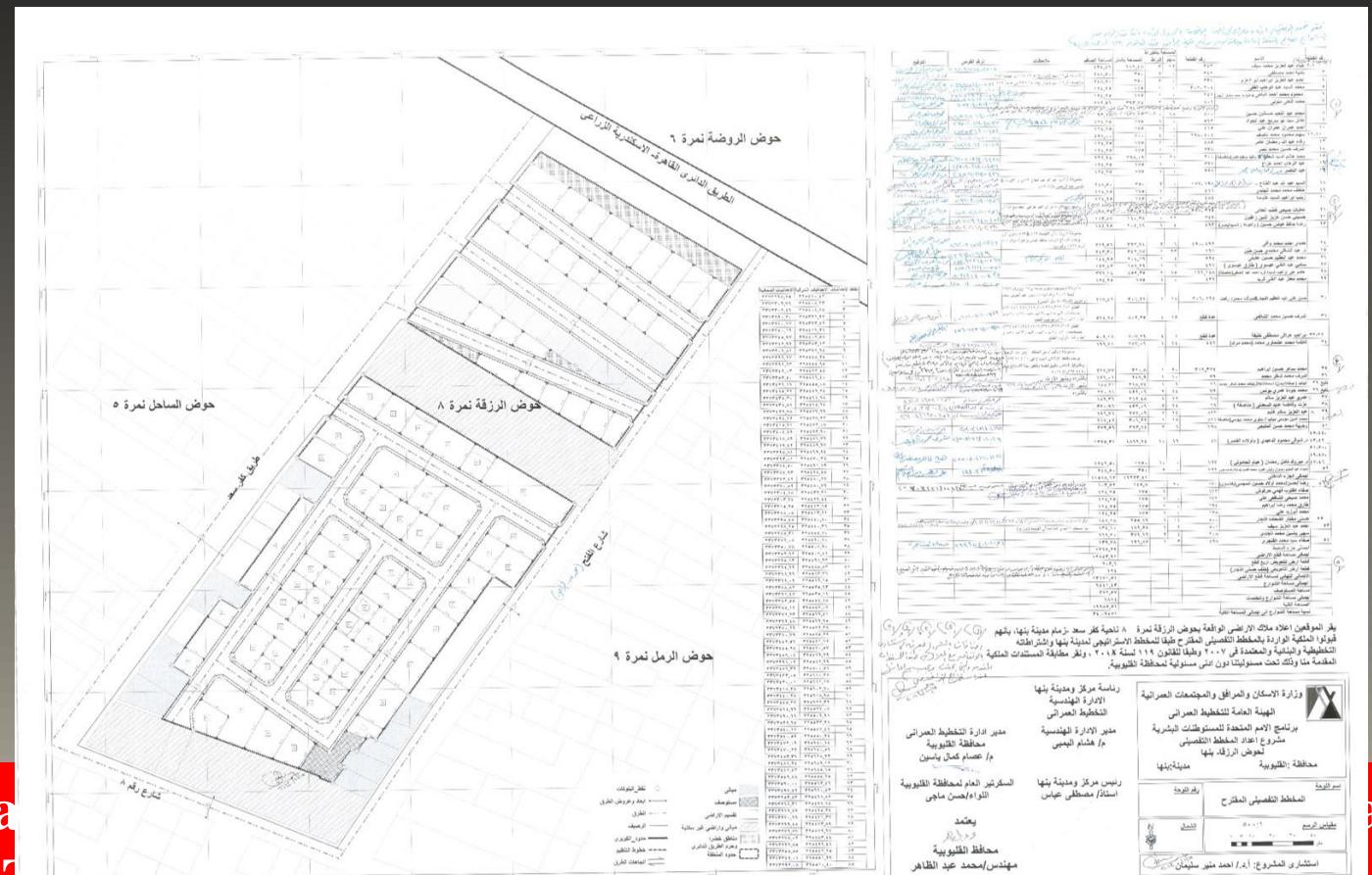
- The total size of the southern part is around 4.9 Faddan
- Land parcel mapping out of physical land survey effort
- Land parcel histories as per information at the Real Estate Publicity Authority (REPA).
- Informal land parcel map from the Land Survey Authority (LSA).
- All data transferred into GIS format.



5-4 PROCESS OF DECISION, PARTICIPATION AND ANALYSIS

- ❑ The LCT had to set up several meetings with the stakeholders to reach a common vision that would satisfy the wishes of all stakeholders involved in the LR according to the GSUP and its regulations,
- ❑ Analyzed the situation of the LR, and consulted the stakeholders through workshops and meetings to obtain a clear view of the potentialities and constraints of the LR.
- ❑ Data analysis was conceptually divided into two categories; traditional, and object oriented. A wide range of applications were based on each category.
- ❑ The LR was analyzed from the following perspectives, the number of land plots, types of land tenure, land ownership, land parcels size, land allocation, streets width and road network.

	Privately initiated land subdivision	Land to land readjustment
Total area devoted to residential buildings (sq.m.)	14742	21367
Total area devoted to road network	4858	6462
Percentage of total land area devoted to road network (in total sq.m.)	32.9 %	30.24%
Number of residential housing units created (floor area in sq. m.)	14742/130*7 floors= 794 units	21367/130*5 floors= 822 units
Percentage of total land area devoted to green areas and open space (in total sq.m.)	zero	zero
Percentage of public facilities devoted to total land area (in total sq.m.)	zero	372.5/21367*100= 1.74%
Total percentage of land devoted to roads, green spaces, public facilities	32.9%	31.98%

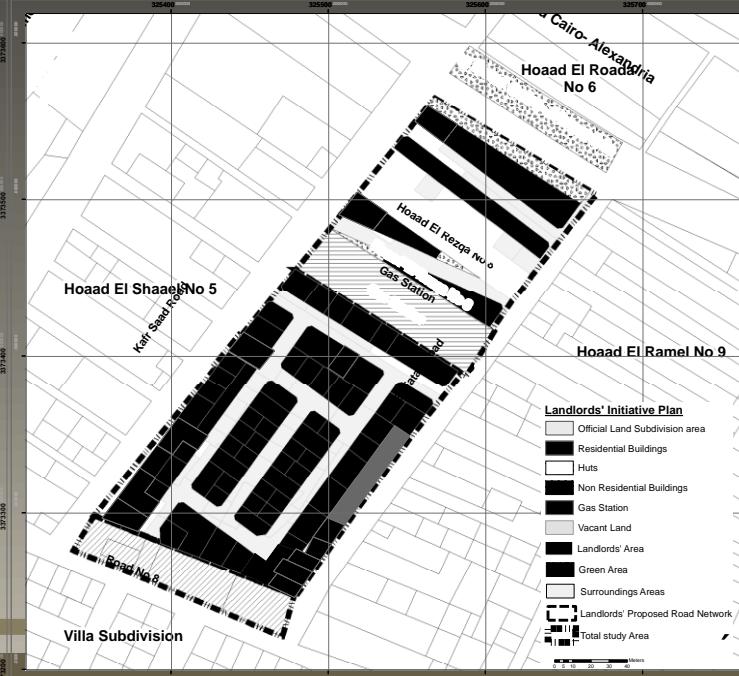
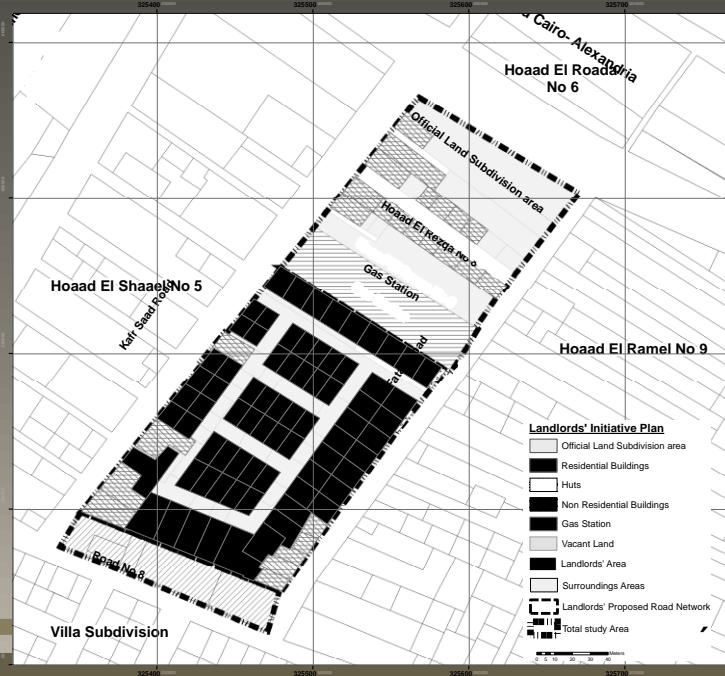
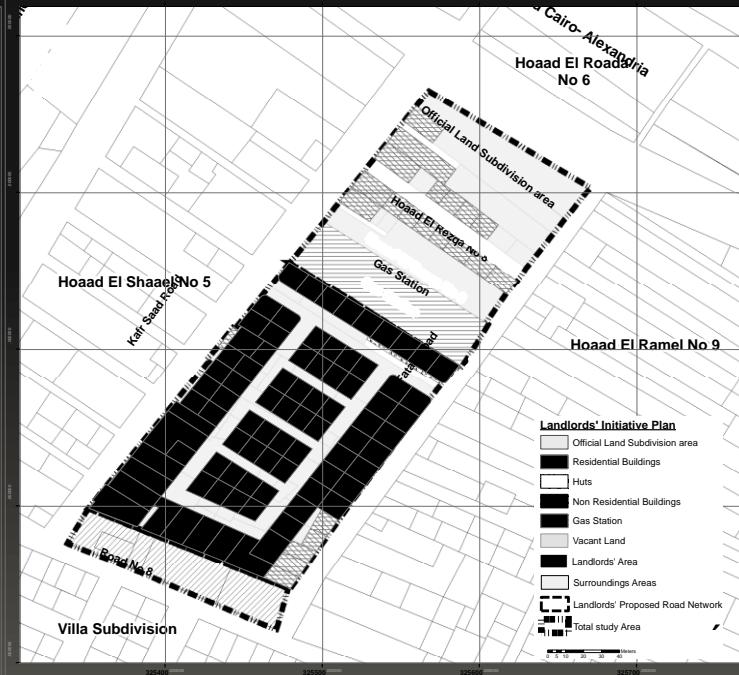


The preparation of the LR took around one year in the governorate in 15/10/2014 (see the front slide). The technical work was finished within a period of six months, while the evaluation, negotiation, and reviewing processes took around another six months

5-5 Comprehensive land to land readjustment scenario;

Within those main guidelines; and intensive negotiations with landlords, various proposals were reached to fulfill the requirements of all landlords and to match the BPL 119

- The street that served as an entry way for the entire site and specifically for this group on landlords' plot was owned by a one figure who's solution was to offer his land to serviced swap land. Yet, the landlords could not asking for extra money to be paid.
- The plan did include the whole site between the public premises till the gas station,
- The proposed road network depended on loop pattern that could allow for vehicle movements.
- The proposed entrance area is 10 meter, and this is matching with the BPL119.
- The plan does meet the requirements of the BPL119, as the road network and social amenities is within a range of 33%,.
- The minimum land size, 120 square meters, is within the specification of the BPL119



5-6 THE ROLE OF STAKEHOLDERS

Achieving Interaction between Niche and Regime

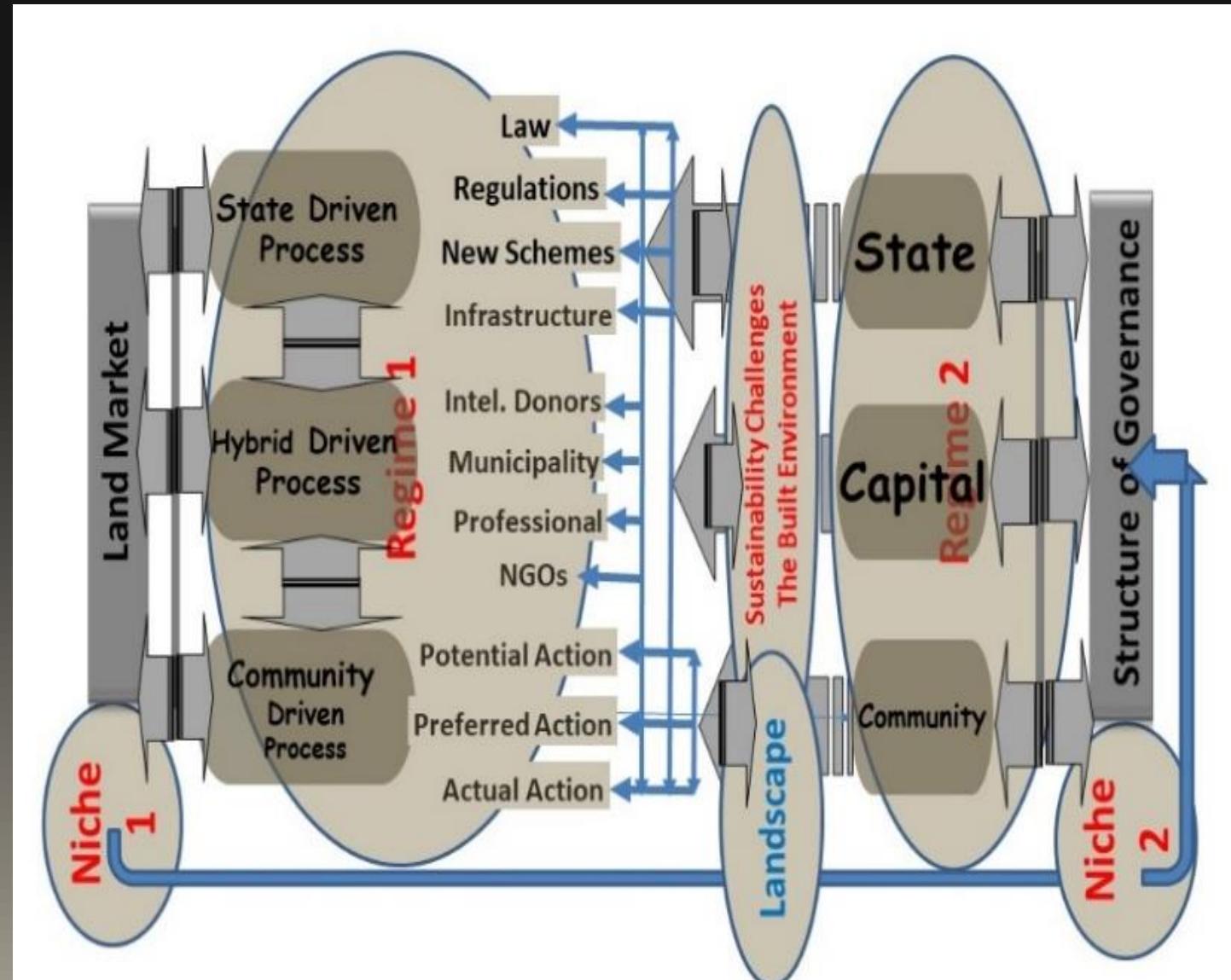
- ❑ First, social network was formulated on the ground through positive participation and negotiations among the landlords themselves as well as, with the LCT.
- ❑ Second, the stakeholders were convinced to identify a range of options that would give landlords the flexibility to choose their setting or the size of the land plots,
- ❑ Third, stakeholders introduced arrangements among themselves that accelerated illegal/semi legal land subdivision.
- ❑ Fourth, the stakeholders' participation present an important entry point to the political decision-making needed for exploring differing viewpoints.
- ❑ Fifth, the stakeholders have relied on a great autonomy in their environment through positive participation in understanding the land readjustment process
- ❑ Sixth, the stakeholders have relied on their culture and their talent and symbolic aspects of their lifestyle by which land readjustment , and settlement form was formulated within the site.



5-7 Two niches, Two regimes, One landscape

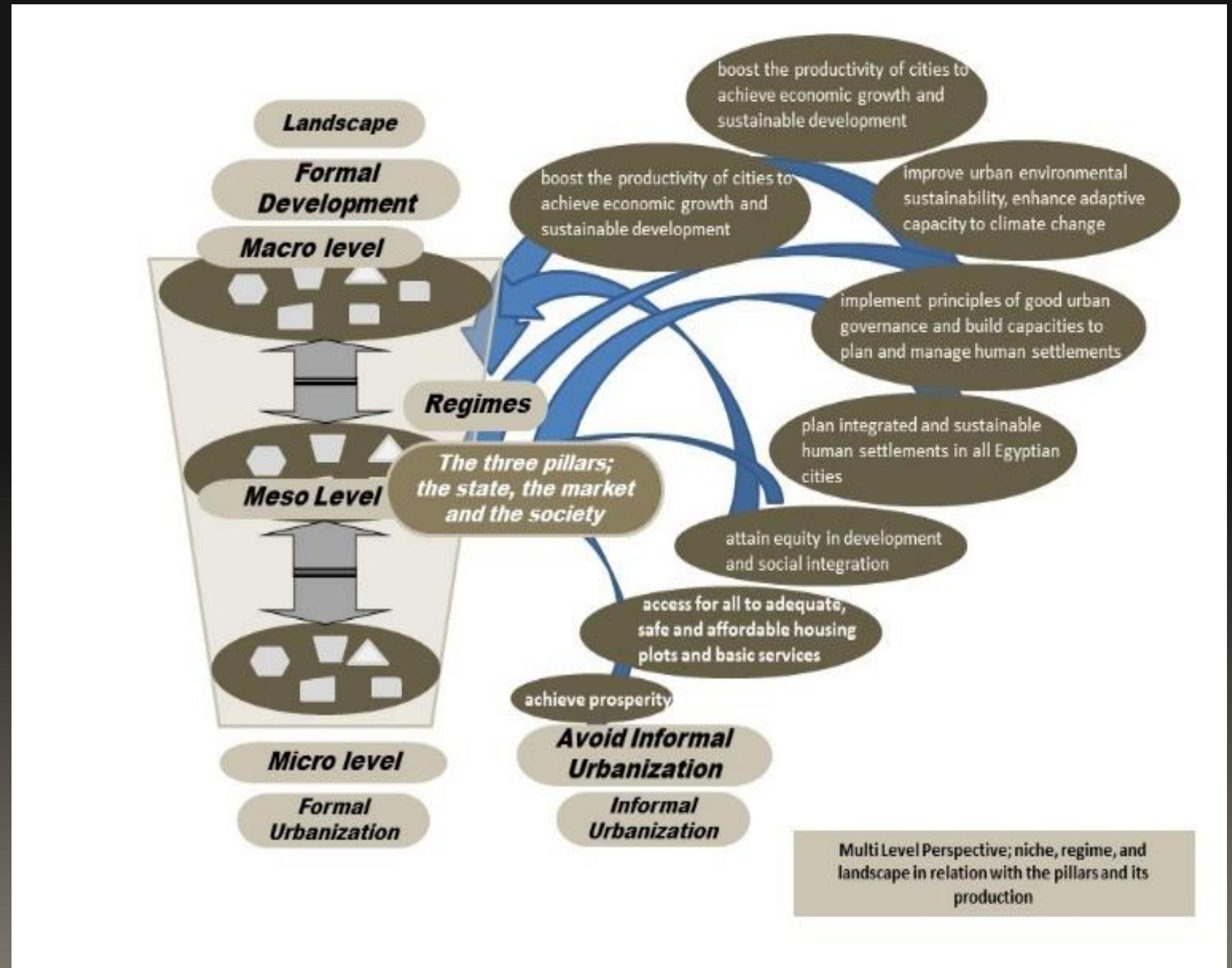
- Following Grin concept, *two niches are operating in two opposite directions: land markets and a system of governance.*
- Both are influencing the final output of the landscape being produced and *both are met to formulate the built environment.*
- *In between niches and landscape, two regimes have existed; the first constitutes the three driven process, and the second represents the three main pillars.*
- The duality of the regimes has been reflected in the final output of the market in which the *formal/informal market have grown*

Fig. 5 Illustrates the relationship between the land market and the three driven process.



6- Conclusion

A model *draws socio-technical transitions and the MLP through the interaction and correlation among the three levels of niche-innovations, regime, and landscape (three pillars)* while the MP draws four phases of transition: *predevelopment, takeoff, acceleration, and stabilization..*



A new mode of Transitions Land Management and security has emerged. Direct these Transitions into a sustainable way to be socially, physically, and economically feasible for future urban growth to benefit the whole society



6- Conclusion

This model has the advantages that:

- **First, *it comes with the dynamic of the duality of economic and social exclusion* in Egypt.**
- **Second, *it is a flexible process that meets changes beyond the formal/informal* and regulatory framework caused by the rapid transitive urbanization.**
- **Third, *it is an adaptable model to cope with outer and inner forces* (economic, social, and political) that might affect the emergence of societies.**
- **Fourth, *it is elastic works with a diversity of actors, and it is flexible with various transitions* and allows us to locked-in/out the privileging circumstances.**



7- Final Remarks

- In the systematic change of urban informality trends echoes pressures of the urban informality formulation that constitutes sociotechnical. It constitutes the interaction between niche, regime, and landscape which are formulating the process of urban informality transitions.
- Urban informality transitions, as a sociotechnical landscape, can occur through complex interactions of the housing-system economy of the production, reproduction, consumption, and distribution of goods and services, interrelated with political economy, circular economy, state, and society.
- The enhancement of a networked society, as an active urban niche, stimulated by increased digitalization, informatization, through the great acceleration in resource use, through rescaling, but also by changing the power of state and grassroots, and by transforming the drivers of change at various socioeconomic-spatial levels.

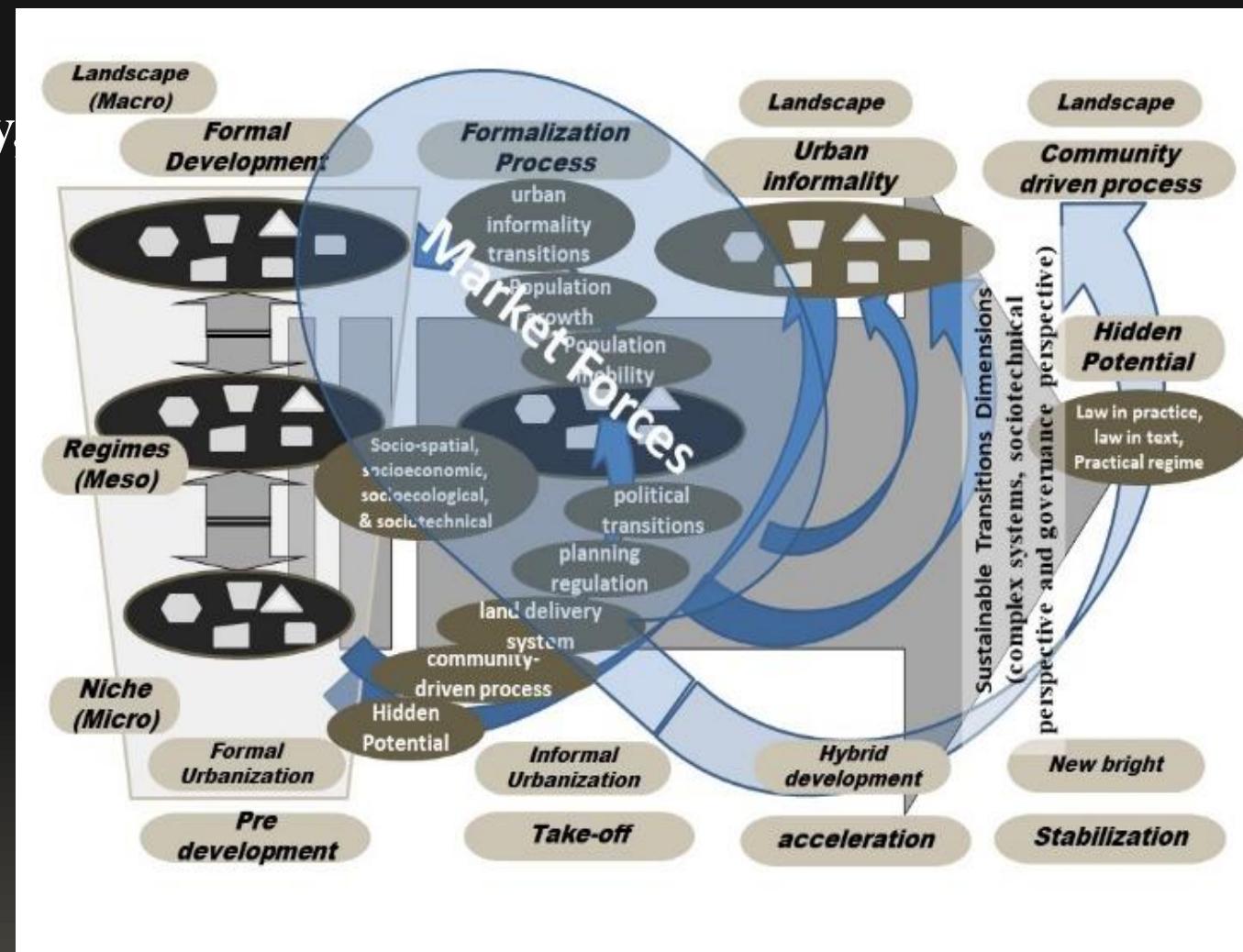
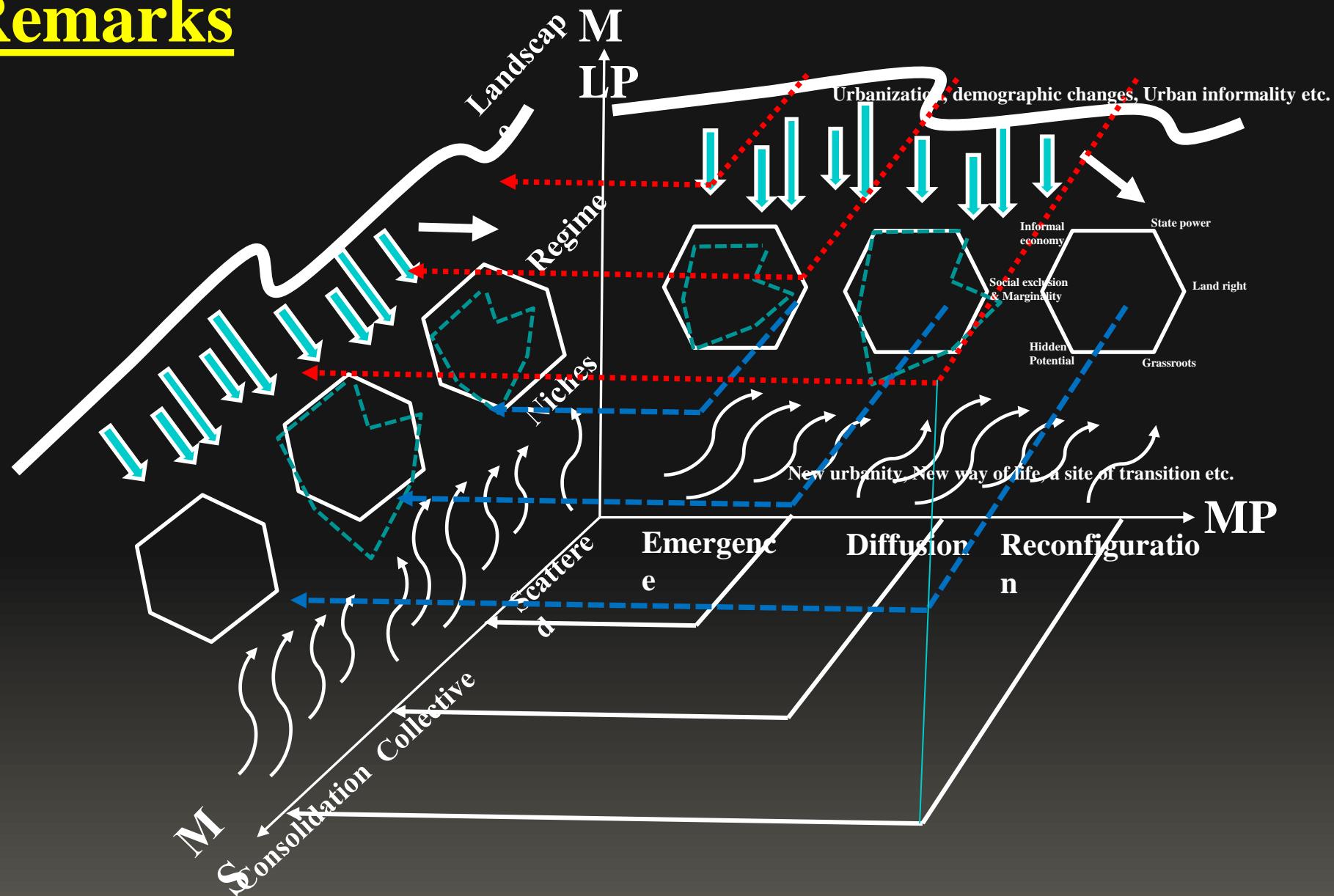


Diagram of the management of sustainability transitions on urban informality's taxonomic in Egypt

Source: Soliman, A. , 2021, Urban informality Experiences and Urban Sustainability transitions in Middle East Cities. Germany: Springer International Publishing AG, Springer Nature



7- Final Remarks



The fluctuation of the power of the state, the evolution of the informal economy, the contribution of the grassroots is determined the level of the land delivery system, the acceleration of the hidden potential of the low-income groups, and the determination of the marginality. Thus, urban informality served as “a site of transitions” over time, and the question is how to create consistency and equilibrium among these magnitudes?



Thank you for your attention

