

The Feasibility of adopting Planning Support Systems in the Land-use Planning in the Egyptian Cities

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Abstract

Recently, many experiences show the increasing probability that PSS will be applicable in the *developing countries* (Sudhira et al., 2009), (Taleai et al., 2014), this paper aims to discuss the feasibility of adopting a PSS used in assessing the sustainability attainment in land-use planning in the *Egyptian cities*, by focusing on the *administrative problems* in managing the planning process in these cities.

This paper includes five sections, the first section illustrates the elements of the *planning system* for those cities, and how land-use plans are developed and implemented, the second section deduces *gaps* in the planning and the local administration systems in those cities, then *expectations* from that PSS to deal with these gaps. The third section demonstrates the *requirements* and *challenges* of adopting that PSS in the planning process, the fourth section illustrates the frameworks for *establishing* and for *applying* it, and the fifth section draws conclusions and recommendations.

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Introduction

Traditionally, many *existing* Egyptian cities¹ *spontaneously* generated, lacking any formal planning process, even after consideration planning principals in this process, still there are many spatial problems (resulted from their spontaneous generation), also administrative problems hindering the sustainable development attainment in these cities. That refers to an urgent need for a *Planning Support System-PSS* for these cities to raise the efficiency of this process.

This paper discusses the feasibility of adopting a PSS used in the *sustainability attainment assessment* in the detailed land-use planning process (on parcel level) *of those cities*, by focusing on the *administrative problems*, as from the author's experience², applying PSSs for supporting land-use planning process, will firstly require to investigate to what extend this process in Egypt, is prepared *on the managing level* to use this tool. Also Sharifi et al. confirmed that "the institutions performance in planning management impacts *directly* the sustainability".(Sharifi et al., 2013, p.78)

Before clarifying the nature of the local administration and planning systems in Egypt, it is important to illustrate some terms.

The "*General Organization for Physical Planning*" (*GOPP*), it is the organization responsible on the physical planning process in Egypt, and has seven "*regional planning offices*" related to it, as Egypt is divided into seven "*planning regions*", each region contains two or more "*governorates*"³.

The administration system in Egypt is represented in governorates, and most⁴ of the governorates include several "*Markaz*"⁵, and each "*Markaz*" contains one or two main cities and several villages.

¹ There are two kinds of cities in Egypt; new planned and existing cities.

² The author has worked 12 years in the General Organization for Physical Planning, which gave her a practical experience on how land-use planning procedures are carried out in the Egyptian cities, which helps in studying the feasibility of adoption of a PSS in land-use planning processes in these cities.

³ Means states and managed by governors.

⁴ There are exceptions for this hierarchy.

⁵ There is no accurate Arabic/ English translation for "Markaz".

1. The Elements of the Planning System for the Egyptian Cities, and how Land-use Plans are developed and implemented

This section illustrates each of planning system's elements; areas covered by cities' planning; and how plans are developed for cities:

1.1 The elements of the planning system for cities

The elements of cities' planning system include actors affecting and affected by the planning process:

1.1.1 Actors affecting the planning process

Figure (1) illustrates the actors affecting *directly* the planning process in the Egyptian cities, as it will be mentioned later the planning process is *centrally* managed, so these actors are *not only* on their local level, but *mainly* on the national level.

On the national level, *the higher council for planning and physical development*⁶ and the *housing, and physical development ministry* supervise the *GOPP* in performing strategic plans on various planning levels⁷ (article 10, unified construction law-2008-p.11).

Also "*the legal construction boundary committee*", which is responsible on studying and validation of the new legal boundary for any existing city (proposed to planning), in order to *occupy* the expected increase in population and provide areas required for various land-uses types in the plan, as this legal boundary identifies the construction activities' limits, (i.e. outside it any construction activities are forbidden), this committee includes members from various institutions, like *GOPP*; the higher council of monuments; agriculture ministry, members specialized in law; and others.

The *GOPP* is cooperated by *experts* that are assigned by *GOPP*, for performing the plans under its supervision and its regional offices, these experts affect the planning process on all levels, especially on the cities' local level.

⁶ Its chair-man is the prime-minister.

⁷ According to article2- the unified construction law, p.3&4, there are four levels for the strategic plans (national; regional; governorate; and master plan on the local level of cities/villages). However, the actors affecting the planning process are on five levels, (national; regional; governorate; markaz; and cities/villages).

Also, no plan cannot be executed in Egypt without the agreement of the *military ministry* (article17, executive regulations-unified construction law-2009- p.27).

On the regional level, the *regional planning offices* perform the GOPP's tasks in their planning regions, and cooperate with "*the physical planning & development administrations*" in the governorates in the preparation of the master strategic plans for cities, under the governors' supervision (articles7 &8, the unified construction law-2008-p.10-11). However, no plans are assigned without the agreement of *the local public councils*⁸ (article18, the previous source-p.27).

The civil society organizations; NOGs; and the private sector affect the planning process on the governorate; markaz; and city levels, as these institutions can support the development by *funding and other contributions*. However the *citizens* (according to the law) can affect the planning process on these levels, as they can donate their lands for establishing utilities and services, also their agreement (with the local public councils) on the plans is obligatory, (before the governor and the housing minister assignment).

As the plans should be presented and illustrated in public meetings, and in case of the citizens objection on any part in the plan, the expert team (performing the plan) is *committed* to perform the required modifications, (article14, executive regulations-unified construction law-2009- p.26), also citizens share in several public meetings (established in various steps of the plans) as stakeholders.

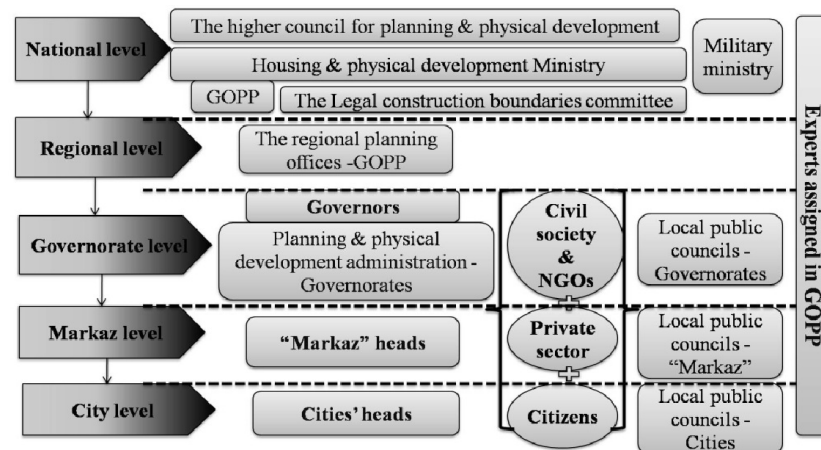


Fig.1 Actors affecting directly the planning process in the Egyptian cities (Nada, 2011)

⁸ This council includes elected persons from the citizens, there are local public council also on the markaz; city; and in some governorates on district level.

1.1.2 Actors affected by the planning process

The Citizens, the investors, and other categories can be affected *positively or negatively* by the planning process, e.g., when the plan provide appropriate areas for industrial uses, that encourages the investors to establish industrial projects, on the other hand, when the plan fails to provide the needed areas in appropriate locations for various services, that demotivates the citizens.

1.2 Areas covered by the planning process for cities

The planning activities on the local level of the cities deal with the areas limited by the previously mentioned (*legal construction boundaries*), figure(2) presents examples for these boundaries.

Fig. 2 Legal construction boundaries for cities and villages in Asyut Governorate (the dark shapes)
(Asyut city's strategic master plan, 2010)



1.3 How land-use plans are developed and implemented⁹

The strategic planning is based on the idea of the stakeholders, and the citizens involvement in the planning process, that is a recent approach for planning in Egypt, which has been adopted by the GOPP, after the activa-

⁹ According to the plans' guides (TOR, GOPP).

tion of the unified construction law (*act 119, 2008¹⁰*), and its executive regulations (2009). The strategic planning is not only land-uses planning, but also roads and infrastructure networks planning, and identification of projects supporting the development called "*priority projects*", because they are decided based on the stakeholders' priorities.

The procedure of the planning (*re-planning*) process for any existing Egyptian city, is divided into three stages, (figure3), preceded by a preliminary stage, in which a report, (concerning the needs and suggestions for developing the city proposed to planning), is prepared by the physical planning administration in the governorate, cooperated with some other institutions, so that the experts (that will be responsible for performing the plan under the supervision of the GOPP and its regional office), take the recommendations in this report into account in the planning procedure, (article10, executive regulations-unified construction law- 2009-p.20).

The first stage is the *master strategic plan*, which is the city planning as *zones*, like industrial areas, residential,...etc. And the identification of "priority projects", which are *spatial*, and *non-spatial projects* (like establishment of a training center for some kinds of hand-made products, because the city proposed to planning is famous with these kinds of products).

The second stage is the *detailed planning* that includes the executive plans and the feasibility studies for those priority projects, and the preparation of the detailed land-use maps for the spatial projects, as in most cases (especially the large cities) not all the city are planned in details, but some selected areas are planned on *the parcel level*.

There are several kinds for those spatial projects, like physical upgrading of some areas; the city extension areas; specific areas planning like industrial areas; the re-planning of deteriorated areas and margin areas surrounding the slum areas; also private projects called "*land division*", these projects are submitted by private owners, who own land that its area equal or exceed 1 fadan¹¹, as these owners should submit land division projects, before establishing any building (articles20-21-22, the unified construction law-2008-p.17-18).

The third stage is the *executive procedure and the plan assessment*, in which the plan is implemented, then the following-up of the implementation, by assessing the attainment of the plan's main and secondary goals, and the execution of the priority projects according to their time plans.

¹⁰ Concerning the physical planning; construction activities; and urban design.

¹¹ An Egyptian area unit = 4200 m².

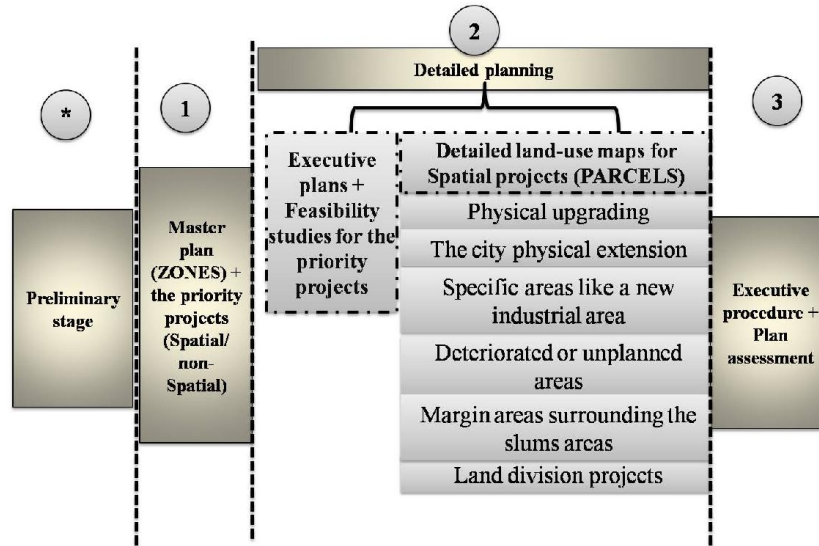


Fig. 3 The planning process stages for the existing Egyptian cities (by own based on TOR, GOPP)

2. The Gaps in the Local Administration and the Planning Systems in Egypt, and General Recommendations and Expectations from the Proposed PSS to deal with these Gaps

After illustrating the planning system's elements of the Egyptian cities, it is important to comprehensively study all the gaps in both the planning and the local administration systems in Egypt, which affect directly the planning process in these cities, to take these gaps (as possible) into account in designing the proposed PSS.

2.1 Gaps in the local administration system

The local administration system is managed according to *the local administration law* (act 43, 1979), this system is represented in three administrative levels (governorate; markaz; city/village). As the local administration system affects *directly* the planning procedure of the existing cities, so it is important to illustrate each of *gaps* from outside and inside this system.

2.1.1. Gaps from outside the local administration system

Figure (4) clarifies the *financial relations* between the central & local authorities, and how the annual budget is managed in Egypt, firstly, the "financial planning" ministry distributes the budget on various institutions in the country, then after the agreement of the parliament and the ministers' council, the finance ministry executes this distribution on these institutions, then each institution provides each governorate with its portion from the budget, according its needs, and each governorate distributes on each markaz in it, and each markaz distributes on each city and village in it¹².



Fig.4 the financial relations between the central & local authorities in Egypt (Nada, 2011)

For example: if there is a suggestion for establishing a regional road for a city, so the city's head should present this project to the markaz's head, and the latter should present it to the governor, and the governor present it to the concerning minister (transport minister), so the minister presents this project to the ministers' council represented in the "financial planning" and the "finance" ministries, to take the agreement on funding this project from the next finance year budget.

The previous example illustrates how the financial relations between the central & local authorities in Egypt *are complicated and time consuming*, which has made the financial recourses of the local authorities *dependent*

¹² According to the finance planning law (act70, 1973), the role of the local authorities just provide data required for the financial planning for any project execution to the central authorities, as all the local projects (like schools) are centrally decided as sectors, which means that each ministry has its own projects' plans.

on the central authorities¹³, which affects *negatively* the local decision making process by the weak response of the local leaders for the citizens needs (Nada, 2011).

So the problem of financial centralization is considered the *main obstacle* facing the physical development & planning processes in the Egyptian cities, which has led to infeasibility of the strategic planning, despite that it is based on the public contribution in these processes.

It is recommended changing this centralized financial policy¹⁴, so that each governorate *identifies* its portion from the national annual budget based on the planning process' outputs for cities/ villages in each governorate.

2.1.2 Gaps inside the local administration system

In order to illustrate the gaps inside this system (table1), it is important first to state the components of every administrative level¹⁵ of it (Nada, 2011):

- The local Administration Unit: includes some administrations (like construction control), and responsible on executing the detailed and the development plans, according to the available annual budget.
- The Public Local Council: suggests various utilities and services establishment.
- The Executive Council : gives consultations to the local public council, it includes the governor or city/village head, and managers of either ministries' branches, or administrations that perform these ministries' tasks¹⁶.

¹³ Except small budget which is specialized for each governorate, to spend it on small projects that are decided locally (according to the local administration law).

¹⁴ No expectations from the PSS to deal with this financial centralization, as the centralization is a general policy in Egypt, that cannot be solved through PSSs.

¹⁵ In some governorates, there are the same three institutions on the district level.

¹⁶ Depending on the executive council's level (governorate, markaz, and city/village).

Table 1 the gaps inside the local administrative system, also general recommendations and expectations from the PSS to deal with them:^a

Gaps	General recommendations	Expectations from the PSS
Despite that the agreement of the local public councils on the cities' plans is obligatory, however (in general) these councils can only suggest projects (according to the local administration law).	The local public councils should have the authority to decide executing projects.	
The executive councils have no members working in physical planning institutions.	Assigning members working in the physical planning institutions in the executive councils.	Involving both the local public and the executive councils in the assessment
Despite that the executive council include members from various institutions, its role in the planning process is just in the preliminary stage, as one of the institutions that prepare the aforementioned report concerning the needs of the city proposed to planning.	Involving the executive councils in an effective way in all the planning procedure stages (supported by law).	the assessment process.

^aThe data in the two tables in this paper are by own, and Nada, 2011.

2.2 Gaps in the planning system in Egypt

The gaps in the planning system are caused from the relations among *institutions affecting directly and indirectly* the physical development on various levels in Egypt, as the fig.(5) clarifies these institutions that performing physical planning activities; financial planning activities; activities serving the physical planning purposes; and institutions of public sharing in the decision-making processes.

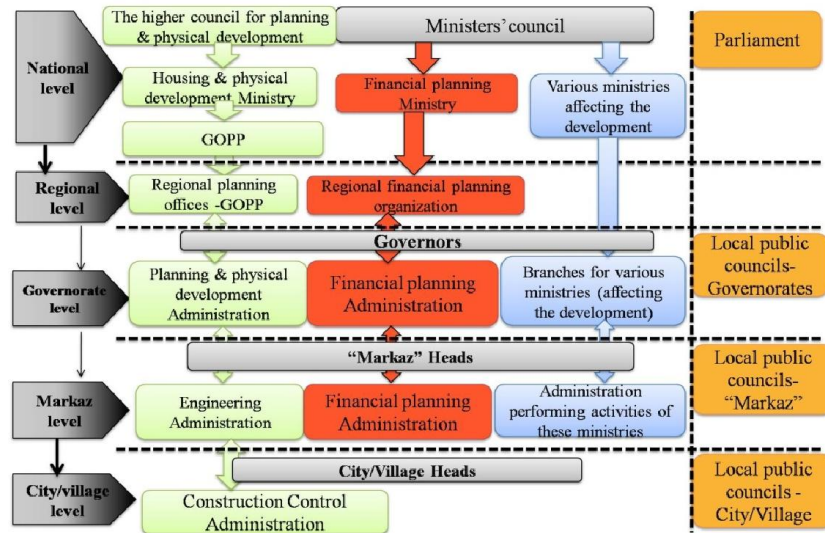


Fig.5 the institutions involved in managing the physical planning process (Nada, 2011)

The following illustrate the gaps in managing the physical planning process (see table2):

- No *actual coordination* between the GOPP and various ministries affecting the physical development (like transportation ministry), as what happens is that these ministries plan *independently* for projects that affect the development, and the GOPP *just* takes these projects into consideration, when performing cities' plans, because there are *no obligatory* articles in the unified construction law, for involving these ministries in the planning process on the cities' planning level¹⁷.
- There is *no coordination* between the GOPP and the *financial planning* ministry, that can provide funds for the execution of the physical plans.
- On the regional level, the regional planning offices related to the GOPP and the regional financial planning organizations, related to the financial planning ministry, *just execute* what is *already decided* by the GOPP and this ministry.

¹⁷ Those ministries are involved in the cities' planning process, only as stakeholders, who share in the public meetings, (established in various steps of the master strategic plan for the cities), through employers in their branches, or in administrations performing their tasks on the markaz level. However, that does-not lead to commitment from those ministries to execute projects suggested in that plan.

- On the governorate and markaz levels, there is *no actual coordination* between each of "the physical planning administration", (which cooperates with the regional planning office in managing cities' plans); the financial planning administration (related to the financial planning ministry); and branches or administrations related the aforementioned ministries.
- In general, there are *vertical relations* among each of institutions performing physical planning activities or activities related to them (green shapes); institutions responsible for financial planning (red shapes); institutions performing activities that serve the physical planning purposes (blue shapes); and institutions of public sharing in the decision making processes (orange shapes). But almost there are *no horizontal relations* among all these institutions, which could grantee the *applicability* of the physical planning process' outputs.

Table 2 the gaps in managing the development process, also general recommendations and expectations from that PSS to deal with them:

Gaps	General recommendations	Expectations from the PSS
The institutions affecting the development process do-not work together in an horizontal framework ¹⁸ .	An horizontal coordination (supported by laws) among them.	Involving them in the assessment process of that PSS (especially in the data input stage).
Centralization in managing the planning process in the GOPP's head office.	The regional planning offices and the physical planning administrations in the governorates should be the main supervisor in the performing of cities' plans. ¹⁹	The regional planning offices and the physical planning administrations in the governorates, should be the managing actors of the PSS
The weak possibility for plans execution resulted from that there are no obligatory articles in the unified construction & the financial planning laws for coordination between the GOPP and the financial planning ministry.	Coordination between the financial planning ministry and GOPP, (supported by laws), in order to grantee the plans execution.	Involving the financial planning ministry in the assessment process.
No article in the unified construction law defining maximum time for the plans assignment. ²⁰	Identifying maximum period for performing the plans in that law.	Inputs to the PSS should include a recent satellite image for the study area.
No involvement for the private sector & the civil society organizations in the annual budget, according to the financial planning law. ²¹	Their involvement in putting the annual budget, (supported by law).	Their involvement in the assessment process.
The Environmental law (act 9, 2009) affects indirectly the planning process. ²²	Modifications in the unified construction law for considering the regulations in that law in the planning procedure.	Involvement these regulations in this law in the assessment criteria in the PSS.

¹⁸ Except the sharing of the local public council of the city in some steps of the master strategic planning and its assignment.

¹⁹ That is already supported by the law (articles 11, 14, 15, & 16, executive regulations, the unified construction law- 2009-p.21, 26, & 27), but needs to be actually happened.

²⁰ The strategic plans assignment may take long time, so some changes may happen in the current state of the city (proposed to planning), and that will not be taken into account.

²¹ As their involvement can lead to their contributions in funding projects.

²² Only the article 42, the executive regulations, the unified construction law, 2009-p.43, states that any air-populating industrial activity should be surrounded with dense forestation buffer area.

3. The Requirements and Challenges of Adopting PSS in the Planning Process for the Egyptian Cities

This section deduces the requirements and challenges of adopting PSS in the planning process for the Egyptian cities, according to the previously studied gaps, and expectations from that PSS to deal with these gaps.

3.1 The requirements for adopting a PSS in the planning process

- *Commitments* from each of the financial planning ministry; various institutions or ministries that provide services and utilities (like roads); public sharing institutions; and the local authorities in cities, to *share* in the assessment process, especially in the data input stage.
- Channels for *involving* the private sector and the civil society in the assessment process.
- The *decentralization* in the GOPP, as the regional planning offices, cooperated with the physical planning administrations in the governorates, should be the *mangers* of the assessment process.
- *Technical support* from experts in PSSs for both regional planning offices and physical planning administrations in the governorates.
- *Financial resources* for the satellite images and other data required for the assessment process.
- Experts in various *sustainability* aspects.

3.2 The challenges of adopting a PSS in the planning process

- *Modifications* in laws should be done.
- Some of the members in the local public and executive councils are *not aware* with importance of sustainability.
- The engineers in the local administration units and the physical planning administrations in the governorates are in need for *training* on *GIS software*.

- The assessment process should include the roads and infrastructure networks' plans, beside the land-uses plans, which requires *attaining balance among various plans*, and that is difficult in the *modeling* process for establishing the PSS.
- The financial *centralization* in the Egyptian system, so even after the success of the assessment process using that PSS, still this centralization is the *main obstacle* facing the success of the cities' plans.
- *Centralization* in managing the institutions affecting directly and indirectly the physical development in Egypt (including the GOPP), and *weak horizontal cooperation* among them.
- Beside the administrative problems, there are *spatial problems* facing the sustainability attainment.

4. The Framework for Establishing the PSS, and the Administrative Framework for Applying it in the Planning Process of the Egyptian Cities

4.1 The framework for establishing the PSS ²³

Figure (6) illustrates the basic outline for a preliminary framework for establishing the proposed PSS.

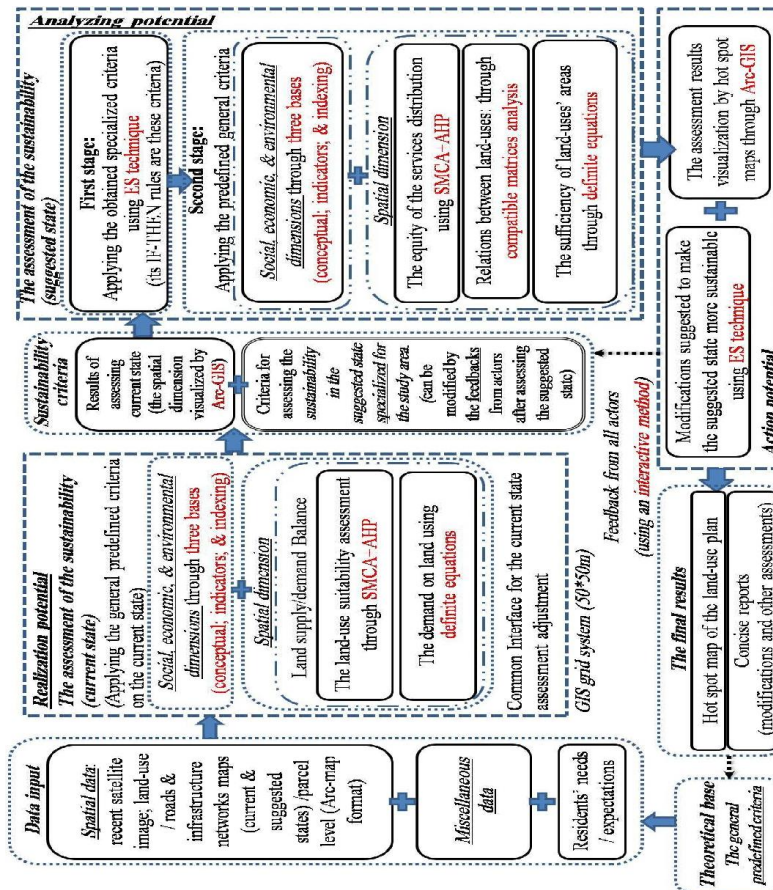


Fig.6 the framework for establishing the proposed PSS (by own)

²³ This framework is based on learned lessons from eight various experiences in assessing sustainability.

That PSS is based on the *artificial intelligence* and *self-learning ability*, and consists of seven sections, each section performs a *definite step* in the plans' assessment, and as it is known the artificial intelligence consists of three aspects, as the *human way of thinking*, the first is to *realize* the problem, then *analyze* it, and so take *actions* for solving it, which represents three sections from the seven sections, which will be illustrated as follows:

The data input:

In this section *several data types* are entered in the PSS; spatial data including recent satellite image; land-use / roads & infrastructure networks maps (*current & suggested states*) on parcel level; miscellaneous data²⁴ ; and the residents' expectations.

N.B.: This PSS is based on a GIS grid system (50*50 m) (Yigitcanlar et al., 2010, p.325).

The realization potential:

This section concerns with *realizing or assessing* the sustainability attainment in the *current* state, to be the base for the *assessing criteria* for the sustainability in the *suggested* state, that are *specialized* for the study area, beside a *predefined general criteria* in the theoretical base of the system.

There are two parts in this section, the first assesses the *social, economic, & environmental dimensions* of sustainability (including the current state of roads & infrastructure networks), through three bases (conceptual; indicators; & indexing), that are formed based on the *predefined general criteria* (Yigitcanlar et al., 2010, p.323) & (Lee et al., 2007, p.510).

The second assesses the *spatial dimension* with regards to the *land supply/ demand balance*, through land-use suitability assessment for determining the lands suitable for various uses²⁵, using the Spatial Multi-Criteria Analysis (SMCA) and Analytical Hierarchy Process (AHP). (Liu, Yong et al., 2007, p.235).

Also the determination of the *demand on lands* from various land-uses types based on the current population²⁶ through definite equations.

²⁴ Mainly for the study area's current state, like the population pyramid; average family number; the current & expected population; ...etc.

²⁵ To be the guide for assessing the land-uses distribution in the suggested state.

²⁶ Because the shortage in land-uses types in the current state, should be the priority to be fulfilled in the suggested state.

N.B.: *Common Interface* for the adjustment of the sustainability assessment in the current state (Sudhira et al., 2009, p.184).

The Criteria for assessing the sustainability in the suggested state:

This section is considered the previous section output (the spatial dimension is visualized by Arc-GIS software), and the next section input. As these are *specialized* criteria for the study area that should be *fulfilled*, in order to *compensate the gaps* in sustainability attainment *in the current state* through its *suggested* plans, also these criteria can be *modified* based on the *feedbacks* from all *actors* after assessing the suggested state.

However the *future* needs (till the target year²⁷) should be also taken into account, through another *predefined general criteria*, as it will be illustrated in the next section.

The analyzing potential:

This section assesses the sustainability in the suggested state with regards to the *current and the future needs*, through two stages. The first is applying the *obtained specialized criteria* for assessing the plan's fulfillment for *the current needs*, using *Expert System (ES) technique* that consists of a knowledge base and an inference engine, the knowledge base consists of IF-THEN rules, which are these criteria (Demetriou et al., 2013, p.80).

Secondly, assessing of the plan's fulfillment for *the future needs*, through assessing the *social; economic; & environmental dimensions* of sustainability (including the suggested state of roads & infrastructure networks), through the same aforementioned *three bases* used in the current state assessment.

And *the spatial dimension*, through analyzing each of the *equity of the services distribution*, using Spatial Multi-Criteria Analysis (SMCA) with Analytical Hierarchy Process (AHP) (Taleai et al., 2014, p.63), and the *relations between land uses*, by assessing the *positive or synergetic*, and *negative* impacts on sustainability from various land-uses combinations, through the *compatible matrices analysis* (Han et al., 2013, p.8). Then checking the *sufficiency* of the areas specialized for various land-uses through definite equations.

²⁷ It is the year till which, the plan aims to fulfill the city needs.

The action potential:

This section performs the PSS *outputs*, which are the *visualization of the land-use plan assessment* in a *hot spot map* form, through Arc-GIS software, and the *suggestions for modifications* to make the suggested state *more sustainable* using *Expert System (ES) technique* (Demetriou et al., 2013, p.80).

These suggestions are presented to the actors through a coordinator to take their *feedbacks* (using an *interactive method*) (Allen, 2008, p.150), for *modifying* the aforementioned *specialized* criteria (obtained from assessing the current state), and so *re-assessing the suggested state*, till the plan is accepted by actors responsible and affected by its execution.

The final results:

This section provides the *hot spot map* expressing the assessment results for the land-use plan, and *concise reports* for modifications in it, beside the assessment results of the *social; economic; and environmental* dimensions, also the *roads and infrastructure networks*.

The theoretical base:

It is considered the base-point and the end-point of the PSS, as this base contains *the knowledge base* for the sustainability assessment standards, also it is able to be *modified* through *feedbacks resulted from several cases* assessed by this PSS, which is a *self-learning potential* in it.

E.g. if several cases for cities with resemble circumstances, show that it is important for the citizens to be provided by *definite transport type*, so the PSS can deduce that, and the user has the choice to add this criterion in assessing the sustainability for next resemble cases, or not.

4.2 The administrative framework for applying the PSS in planning process of the Egyptian cities

Figure (7) illustrates the administrative framework for applying the PSS in planning process of the Egyptian cities.

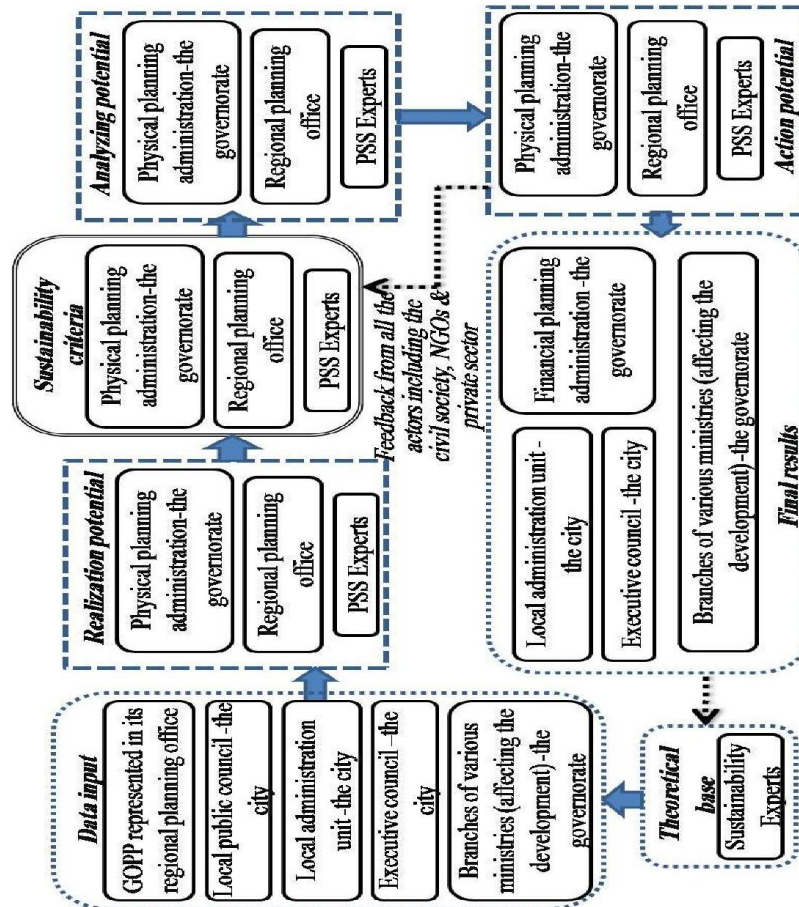


Fig.7 the administrative framework for applying the PSS (by own)

As previously mentioned the framework of the PSS consists of seven sections, so the components of the administrative framework, are the actors²⁸ (or stakeholders) *performing* or *benefiting* from each section.

Beside the *managing actors* for the assessment process, which are the regional planning office; PSS experts; and the physical planning administration in the governorate, that should share the GOPP's regional planning office in managing the PSS, because this administration is the *main responsible* on performing the detailed plans (type of plans assessed by this PSS), with the cooperation of this office and consulting offices (article 21, executive regulations-unified construction law-2009- p.28). So these *managing actors* share in *all* sections with other actors stated below.

The data input:

The following actors *provide the data* required for the assessment process:

The GOPP & its regional planning office (for providing the plans proposed to assessment); the administration unit of the city; the executive council; the local public council of the city (for expressing the citizens' needs); and various ministries' branches (affecting the development) in the governorate like education.

The realization; analyzing; & action potentials sections:

Their actors are only the *managing actors*.

The Criteria for assessing the sustainability in the suggested state:

As aforementioned, these criteria are *modified* after the actors' feedbacks on the suggestions (provided by the PSS to make the plan more sustainable), because each actor should *agree* on the plan for various causes²⁹. This section's actors are also the *managing actors*.

²⁸ These actors have been selected based on the analysis of the gaps in the local administration and planning systems in the Egypt, and the expectations from the PSS to deal with these gaps.

²⁹ E.g. the financial planning administration in the governorate; civil society; NGOs and private sector can contribute effectively in the plans execution by funds or other contributions, also the local public council agreement on these suggestions is important, because this council represents the city's citizens.

The final results :

The following actors concern with the final results, because these results affect *directly* their work:

Various ministries' branches in the governorate; the executive council of the city; the city's administration unit; and the financial planning administration in the governorate.

The theoretical base:

Experts in various sustainability aspects are the *main actor* in this section.

It is clear that the sections *depending* on the *efficiency* of the PSS, (the sustainability criteria; realization; analyzing; and action potentials), are managed *only* by the regional planning office; the physical planning administration in the governorate; and PSS experts (i.e. the PSS managing actors), as these sections required definite *backgrounds* in land-use planning.

While the actors in the other sections, (that are *dependent on the contributions* of these actors or *provide outcomes* to them), are varied according to *the type* of the section, e.g. the actors in the input data section include institutions that have necessary data for a *comprehensive assessment process*, whereas those that concern with the outcomes of the final results' section are actors, that will *be affected directly* from these results.

5. Conclusions and Recommendations**Conclusions:**

- There are a *centralization problem* in each of the financial; administrative; and the physical planning systems.
- Weak *horizontal coordination* among institutions affecting the physical planning and development processes.
- Problems in the administrative system's structure hinder the success of the physical plans execution.

Recommendations:

- Beside the administrative problems, there are *spatial problems* in the Egyptian cities (e.g. the difficulty in upgrading old parts of some cities), should be studied.
- Some laws should be *modified*, and the *environmental law* needs to be empowered.
- The physical planning administrations in the governorates need financial and technical support, because these administrations are the responsible actor on execution the detailed plans (assessed through the proposed PSS).
- The executive councils should include members work in physical planning.
- The local public councils should include more highly qualified members, and the local administration units need raising the qualifications of their employers, to cope with the technological development in managing the physical planning process.
- In order to benefit from that PSS, there should be *commitments* supported by *law* from institutions affecting the physical planning and development processes, to be involved in the plans' assessment, and so committed to execute these plans, (supposing that the central authorities of these institutions -like financial planning ministry- will delegate to their local authorities in cities -like the financial planning administrations- to take decisions). And also involvement of the private sector; NGOs; and civil society in this process.

Acknowledgement:

I really appreciate the supporting of my supervisor Prof. Dr.-Ing. habil. Karina Pallagst, Chair of International Planning Systems Department-TU-Kaiserslautern, as she is very cooperative, and generous in time and efforts, also she has kindly assessed this paper, which is connected to a great extent with my PhD dissertation.

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