



ELSEVIER

Contents lists available at ScienceDirect

Environmental Development

journal homepage: www.elsevier.com/locate/envdev



Integrating strategic environmental assessment into spatial planning in Egypt



Ibrahim Rizk Hegazy*

Department of Architecture, Faculty of Engineering, Mansoura University, Egypt

ARTICLE INFO

Article history:

Received 8 March 2015
Received in revised form
3 May 2015
Accepted 4 May 2015

Keywords:

Egypt
Strategic Environmental Assessment
Environmental development
Spatial planning

ABSTRACT

Like most developing countries, Egypt has been undergoing rapid urbanisation and industrialisation. Recently, Egypt is progressing in many planning sectors; nevertheless, it is argued that there have been many undesired effects on the environment resulted from these development processes. In fact, it could be said that development processes, as a result of national policy over the past three decades, have been associated with the extensive exploitation of natural resources for urban growth. Since sustainable development or sustainability has been highlighted as an essential principle in development planning, it is deemed necessary to modify the existing planning systems so as to cope with the challenges various developments are being confronted with and realise the purpose of sustainability. Thus, in order for better environmental policy and decision making this paper advocates that SEA is the right way towards achieving more sustainable patterns of development. It is felt that the major contributions of this research are: first, to discuss environmental assessment for urban development PPPs which has to date been neglected by the Egyptian government; Second, to propose a model to incorporate SEA process within the spatial planning process in the country.

© 2015 Elsevier B.V. All rights reserved.

1. Introduction

The need for a combination of development and environmental conservation in order to achieve an improved quality of life has been acknowledged by international organisations and many national

* Tel.: +20 101 6060 100.

E-mail address: i.hegazy@gmail.com

governments, mainly from the developed countries, since the 1970s. In the late 1980s, the environmental movement raised awareness for the need to take environmental aspects into account in policy making at an early stage. In 1989 the actual term (Strategic Environmental Assessment) (SEA) was coined in the UK, an understanding of the concept was derived from that of project based EIA.

Strategic Environmental Assessment (SEA) is considered as one of the key instruments applied to integrate the environmental issues into a spatial planning process effectively (Alshuwaihat 2005; Jones, et al., 2005). While Environmental Impact Assessment (EIA) has been used to assess the environmental impacts of development projects. The SEA is applied on a higher decision making level to assess the environmental impacts of policies, plans and programs (PPPs) (Sadler and Verheem, 1996; Kjörven and Lindhjem, 2002; Ahmed et al., 2005).

Furthermore, SEA is designed to help countries to make their policies, plans and programs more sustainable. Therefore, it is considered as an essential tool to achieve sustainability and to assist countries meeting their obligations under target 9 of the Millennium Development Goal 7: *“to ensure sustainability by integrating the principles of sustainable development into country policies and programs and reversing environmental degradation”* (Therivel and Partidário, 1996; Ahmed et al., 2005).

The basic aim of the SEA is to ensure that environmental considerations are fully integrated into a decision-making process from the earliest possible stages (Sadler and Verheem, 1996). Implementing SEA of spatial plans has the potential to reduce the negative environmental impacts and enhance the positive effects (Jones et al., 2005). Additionally, the use of SEA at earliest stages of the spatial planning process has guaranteed that environmental issues beyond the boundaries of the project area were incorporated into the design process (Goodstadt and Partidário, 2010). Discussing the benefits to be gained from this integration, Jones et al. (2005) argued that the perceived benefits of SEA in terms of delivering sustainability aspects stem from its proactive, strategic nature and its capacity to effectively integrate the environmental concerns with social and economic issues during the decision-making process. Other widely acknowledged benefit of SEA process is that it can streamline and strengthen project EIA practices. Others argued that SEA can raise the environmental awareness and understanding amongst participants and can potentially enhance transparency and equity during the preparation of spatial planning (Jones et al., 2005).

Egypt suffers from several environmental problems that resulted from numerous factors: poor environmental planning and lack of environmental issues to be fully studied and considered at early stages during the preparation of spatial and detailed plans. Indeed, there are no clear mechanisms for how the environmental considerations are taken into account during the preparation process of strategic spatial plans. Consequently, a wide range of contemporary problems are raised such as erosion of farmlands, traffic congestion, high population densities, deterioration of infrastructure in addition to various social, economic, health, and psychological problems. The existing legislation requires only EIA for the projects according to specific guidelines. However, Environmental Assessment for the plans and policies is not compulsory in the Egyptian legislations to date. According to several studies, traditional project-based EIA has approved inadequate incentives and capacity to assess the environmental impacts at a broader temporal or spatial level (Abdel Wahab, 2003; Abul-Azm et al., 2002; Badr, 2009). Therefore, it is recommended that EA process should be applied at the strategic level. At present, there is no formal provision for the process of SEA in the framework of environmental legislation in Egypt.

Given this background, the objective of this paper is three folds: to explore how SEA, as a tool, could be introduced into the spatial planning process in the Egyptian context within an appropriate legal and institutional framework in order to guarantee that environmental issues are effectively considered at an early stage into the existing spatial planning process, to identify the benefits and constraints of this integration and to propose an institutional framework model to include SEA into the existing legal framework. The paper is divided into six parts; the first part is the current introduction, the second part illustrates the Egyptian environmental context, the third part presents the research methodology, the fourth part examines how the environmental issues are being considered during the existing spatial planning process in Egypt, the fifth part presents the results of the potential benefits and constraints to integrated SEA into the spatial planning process, and finally the paper suggests a model through which SEA can be integrated into spatial planning system. This model can contribute for the national discussion on this integration.

2. Egypt's environmental context

Environmental policy formulation in Egypt has been an evolving process that has changed with time, modified with major unexpected environmental actions. The real movement towards environmental protection and growing recognition of the importance of the environment started in the 1990s. This witnessed the beginning of strategic thinking in environmental policy making, calling for integrated regulations for the environment, and the establishment of hierarchical institutional structure. In 1994, Law No. 4 on environmental protection was enacted as the first environmental law to deal with all the media of the environment, and it also introduced for the first time the notion of sustainable development (METAP, 2000). Furthermore, EIA was formally introduced in Law No. 4/1994 as a management tool for achieving sustainability within Egyptian development.

Recently, the government of Egypt enacted Law No. 9/2009 setting out amendments of some provisions of Law No. 4/1994, including some articles related to EIA; these amendments strengthened EIA legal provisions. The new law sets out the main principles underlying environmental management and protection initiatives. It seeks to achieve environmental protection through improvement of institutional, legislative and technical frameworks at local, regional and national levels.

Notwithstanding this considerable progress in environmental management for promoting sustainability in strategic actions, there are many challenges associated with development processes that still face the environment. These inherent challenges have led to consideration of the case for introducing Strategic Environmental Assessment within the Egyptian spatial planning to be the tool for achieving sustainable development in the spatial planning process and practice. Fischer (2007) argued that SEA is needed in order to promote a stronger representation of strategic environmental thinking in PPP making.

Paralleling the global concerns for the environment, the Egyptian national policy for growth considers that spatial planning has to play its role in promoting sustainable development. One approach to this could be the development of a system for integrating SEA into spatial planning processes as part of an integrated approach to sustainable development within the wider national planning system for Egypt. This is the subject of this research.

3. Research methodology

The study relies on fieldwork conducted in Egypt in 2014. Information obtained through interviews conducted with professional staff in government at the planning authority (GOPP), the environmental authority (EEAA) and its regional branch offices, local administrative authorities, environmental consultants and university staff. Out of 35 interviewees approached, 20 were willing to be interviewed. It was difficult to increase the number of interviews because of the relatively low response rate, time constraints of interviewees and lack of environmental awareness.

Each interview began with a non-structured discussion that sought to explore what and how they think about SEA. In order to effectively and comprehensively explore the complex idea of adopting SEA from the selected interviewees and to provide flexibility for contingency questions, the interview moves onto a semi-structured approach to probe any unclear responses. Moreover, various cases of SEA international practice were discussed.

In addition, 40 questionnaires were applied to different organisations dealing with research, implementation of development and environmental projects, preparation of spatial plans, and environmental legal issues. The collected data was analysed using simple statistical methods like mean, percentages and frequency distribution.

Secondary data for this exploratory research was obtained from a desk study using various international articles, journal papers, conference proceedings, related books, legislation and regulations, a series of plans, proposals, research programs and reports. National documents and other relevant documents of planning system in Egypt as well as guidelines and reports from spatial plans produced by the planning authority and from the environmental agency, and other relevant documents related to urban development and environmental policy making and practice in Egypt.

4. Environmental issues within the exiting spatial planning process in Egypt

The results about the current level of integration of environmental issues into planning process and implementation of spatial plans showed that the environmental considerations are currently restricted to only a section into the spatial plans. 11 interviewees out of 20 believed that the integration between environmental considerations and spatial planning as well as decision-making process is either low or very low, 5 out of 20 indicated that it was at a medium level and only 4 of the interviewees thought that the integration was high. When the same interviewees were asked whether there was any coordination between the planning authority and the environmental agency during the spatial planning process or during the preparation of the strategic plans for cities, over half of the interviewees replied in the negative, while only 9 interviewees replied in the positive. It is worth mentioning that the interviewees who believed that there was coordination, many of them did not recognise the kind of coordination and the level at which it took place. They thought that there was coordination just because the representatives from EEAA were invited to attend the meetings with other stakeholders during the different phases of strategic plans which is not the case.

The above results were also confirmed by the questionnaires. When they were asked to assess the current level of importance being given to the environmental issues within the spatial planning (see Fig. 1), 57.5% of the respondents recognised that environmental issues can be placed at a low level whereas 30% indicated that the environmental issues are accorded medium priority within the existing planning processes.

From the desk studies it could be noted that although environmental studies are carried out in most of the different types of spatial plans prepared by GOPP, these studies are conducted as an inventory of the natural environment conditions of the site. There is no assessment of the possible future conditions of the sites based on different development scenarios. At the project level, full EIA studies are however required to be undertaken according to the law but there is no provision requiring EA for plans or policies.

As per law, the EEAA is responsible for the EIA studies for projects but has no mandate to analyse environmental issues in the strategic plans. This is also the case for the environmental law 119/2009 that does not mention any article tackling the implementing of SEA in the field of spatial planning. From this discussion, it can be concluded that the environmental issues within the spatial planning process in Egypt are facing numerous obstacles in terms of: unclear mechanisms, insufficient environmental studies, low priority of the environmental issues, lack of integration of environmental issues with the planning phases, and lack of coordination between the environmental and planning authorities.

It can be also said that there is a major conflict in the planning process in Egypt in the sense that there is no relation between the environmental studies conducted during the preparation phases and how these studies influenced the final decision to accept or reject the draft plan or to prioritise between different planning alternatives. To overcome these obstacles there is a pressing need for Strategic Environmental Assessment to be implemented in Egypt in order to insure that the environmental issues are effectively incorporated during the planning and decision-making process. It

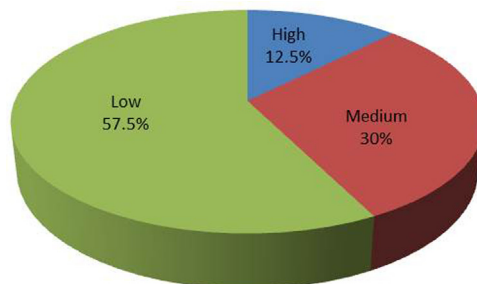


Fig. 1. The level of coordination between GOPP and EEAA.

is advocated the adoption of Strategic Environmental Assessment as a means of achieving sustainable development in planning practice.

5. Benefits and constraints of SEA integration into the spatial planning process

All interviewees expected that SEA will help to increase the environmental awareness of both planners and decision-makers, and they considered that other suggested SEA benefits will be achieved if planners and decision-makers have a higher awareness of environmental issues.

Promoting well-informed decision-making in the spatial planning process is highly expected as a benefit of SEA. 14 interviewees argued that the assessment of environmental impacts would enable decision-makers to realise the implications of making decisions that are detrimental to the environment. This is particularly crucial in considering alternative strategies and policies, where SEA could provide a procedure for decision-makers to take account of possible environmental effects of spatial planning plans. Through SEA it was considered that decision-makers will be informed of the pros and cons of decisions made at every stage of the planning process.

Achieve planning systems integration achieved a relatively high score. Five interviewees believed that institutional coordination is already workable and it is the divided planning system that causes problems. On the other hand, three-quarters of the interviewees complained that institutional coordination is poor because of the egotistical attitude of the urban agencies.

The concept of SEA can contribute to the sustainable development process; SEA was widely recognised by more than three-quarters of the interviewees as a valuable component of the sustainable development process. Consistent with the nature of an SEA system is its potential capacity to contribute to the achievement of sustainability aims. Most of interviewees considered that SEA is based on several principles, which provide the basis for the development of more sustainable policy, plan and programme proposals.

Increasing public awareness and enhancing public involvement practices has the lowest rate among the interviewees; this may be due to 65% of the interviewees thinking that public involvement is not critical to policy-making. Public opinion may be collected for reference purposes but the public does not usually participate in spatial planning PPPs formulation. On the other hand, many interviewees believed that through an exchange of opinions between public and planners, public may gain more environmental knowledge and have higher awareness.

The results of the questionnaires regarding to the main benefits to be obtained from the integration of SEA into the spatial planning in Egypt can be seen in Fig. 2. These results showed that: 85% of respondents agreed and strongly agreed that integrating SEA into planning process in Egypt

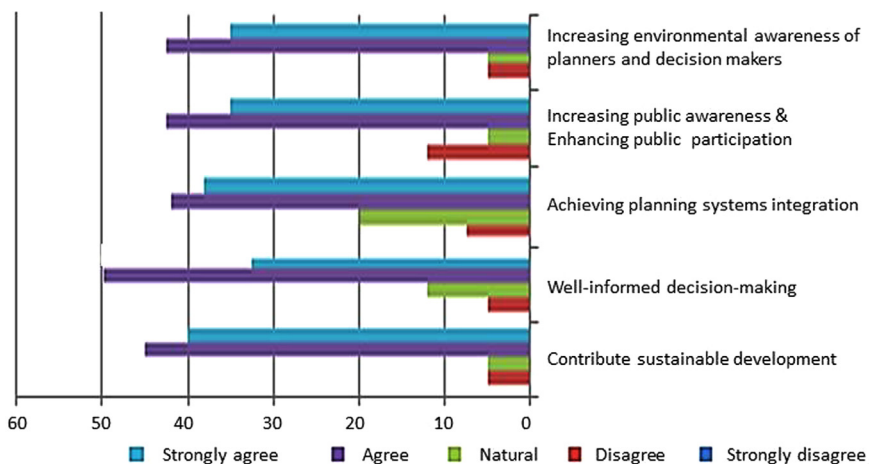


Fig. 2. Overall benefits of integrating SEA into spatial planning process in Egypt.

will promote better practices for sustainable development, 82.5% agreed and strongly agreed that SEA will be an effective tool to fully consider the environmental issues during early stages of planning process, then this will contribute for the decision making process to become more effective and efficient. 80% strong agreed and agreed that this integration will help in achieving planning systems integration and 77.5% agreed and strongly agreed that SEA will enhance the public involvement practices in the planning process and will increase public awareness towards environmental issues.

Benefits mentioned above matched the benefits mentioned in many international studies like achieving sustainability, enhancing the public involvement, increasing transparency and awareness and incorporating the environmental issues more effectively into the spatial planning process (Brown and Therivel 2000; Stinchcombe and Gibson 2001; Jones et al., 2005; Stoeglehner and Wegerer, 2006; Fischer et al. 2009).

Regarding to the constraints to integrate SEA into the spatial planning, the absence of SEA legislation in the national environmental legal framework of the country was appointed as the most important. For these interviewees this fact will difficult its application into the spatial planning process. Fig. 4 shows that insufficient political will, lack of capacity in SEA and poor technical know-how are the other most cited constraints.

From the international literature we can see that many developed and developing countries have implemented SEA either on a voluntary basis or through a national legislation including other provisions, e.g. statutory instruments, cabinet and ministerial decisions, circulars and advice notes (Therivel and Walsh 2006).

Among the advantages of implementing SEA as a mandatory systems in many countries we can highlight some like ensuring that strategic actions with potentially significant environmental effects do not escape assessment, helping to justify adequate resourcing of SEA and give greater legal force to SEA findings. Most of interviewees strongly argued that a clear legal framework will prove to be beneficial to SEA practice, whether providing a minimum regulatory context or a more prescriptive set of procedures. From this ongoing argument it can be concluded that there is no ideal method through which SEA can be introduced in different contexts as it depends on the conditions of each country which can facilitate or constrain this process. However, it can be argued that, in a developing countries case, a legal basis for SEA is essential as it increases the effectiveness of SEA process and practices. Moreover, the legal basis can provide basic SEA requirements, standards and for allocation of responsibilities as well.

The second most important constraint cited by the interviewees was insufficient political will in Egypt; the environmental issues remain secondary in the national agenda. For many government agents and part of the national society environment issues are depicted as in clashing with economic development. The fact is that without a strong political will SEA integration and implementation in the spatial planning process will be not effective.

In this context, most of the interviewees claimed that powerful political support with strong environmental perspectives is considered as one of the most important factors in the adoption of an effective SEA in Egypt. Many interviewees pointed out that to change this situation, it is important to give environmental issues more priority in decision making processes. More than three-quarters of the interviewees argued that the low priority of environmental issues in Egypt may be the potential root of every barrier to SEA application and its results' implementation.

Moreover, the most critical barriers which may influence the effective SEA application as considered by most of the interviewees are the poor institutional coordination and non-integrated planning system. They believed that the current negotiation channels between agencies seem to be insufficient, and this poor coordination results in a non-integrated planning system. The urban agency does not inform the environmental agency while urban PPPs are being formulated. It may ask its opinion only when the urban development PPPs have been selected or it may make decision without consulting with it. Poor institutional coordination is a common problem in the Egyptian government. One interviewee claimed that it is essential to achieve a willingness to co-operate in the SEA process, so ensuring that those who are involved perceive themselves as real actors in policy and plan making.

During the interviews, the quality issue was highlighted. 16 interviewees believed that an effective implementation of the SEA process and procedures provides sufficient results and findings. In this context, sufficient advisory guidelines and reliable methodologies are identified to be potentially important to SEA application. Many interviewees stated that SEA will be a new tool, and there will be

limited knowledge of methodological and technical issues in the early years. It is important therefore for operational guidelines to be in place in order to show planners how to conduct SEA. 70% of the interviewees felt that the absence of sufficient guidelines would be a critical impediment to SEA application. Environmental planners claimed that poor planning may be rejected by decision makers because unreliable methods will make accurate SEA more difficult.

Most of the interviewees believed that training support and skilled personnel are important keys to the effective application of SEA. Both the conductors and reviewers need to be skilled enough to carry out their roles; they should be provided with adequate methods and techniques to guide their work. Many interviewees argued that the lack of a clear understanding of needs, objectives, values and methods may pose a critical issue for effective SEA application.

The results of the questionnaires regarding to the key constraints to integrate SEA into the spatial planning in Egypt can be seen in Fig. 3. The weak political will was appointed to be the most key constraint by the respondents. The results moreover showed that 80% of respondents agreed and strongly agreed that absence of SEA legislation in the national environmental legal framework will hinder effective SEA application within planning process in Egypt, 77.5% agreed and strongly agreed that lack of coordination between planning and environmental authorities.

6. Effectiveness of SEA application

SEA can therefore be seen as a tool to enhance decision making (Fischer, 2007). Through SEA, information is produced for decision makers and the public, with the intention of providing a sound basis for decision-making. A good quality SEA process informs decision makers on sustainability of strategic decisions, facilitates the search for the best alternatives (Fischer, 2007). Therefore, it is advocated that for SEA to be applied sufficiently, it should be incorporated into the political system, and support transparency in the decision making process. In broad terms, the effective SEA results in the following (see Table 1).

For this purpose, the following fundamental effectiveness factors are identified from (Fischer and Seaton, 2002; Therivel, 2002; Caratti et al., 2004; Joao, 2005; Morrison Saunders and Fischer, 2006; Runhaar and Driessen, 2007):

- 1) **Sustainability driven**, SEA should be undertaken in the light of achieving sustainable development.
- 2) **Early involvement**, SEA should be applied at the earliest stage of the planning of a proposed strategic action that may influence the environment.

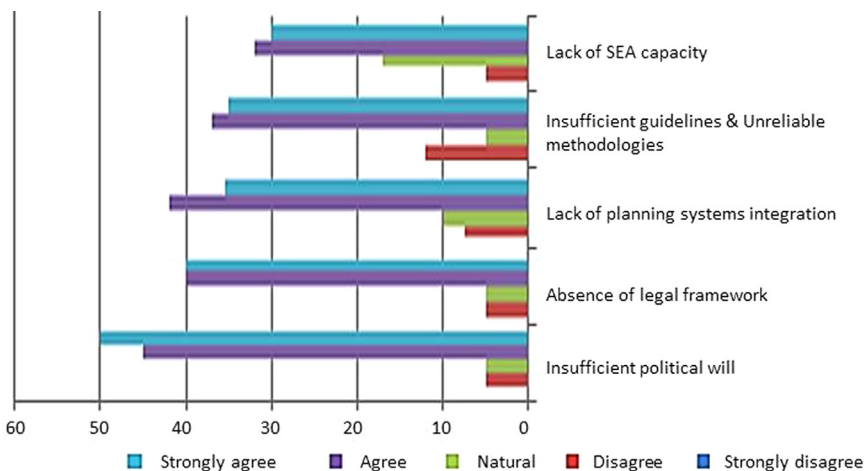


Fig. 3. Overall major constraints might influence SEA integration into spatial planning process in Egypt.

Table 1

The impacts of an effective SEA system in decision making.

Source: Fischer (2007).

-
- Stronger representation of strategic environmental thinking in PPP making.
 - More effective reasoning in decision-making.
 - More efficient decision-making.
 - Better support of good governance in decision-making.
-
- 3) **Integration**, SEA should be fully integrated into a planning process and contributions made by it must be considered when a proposed action is being adopted, and have real influence on the final decision-making of the programme.
 - 4) **Flexibility**, SEA teams and SEA procedures should be flexible to respond appropriately to the various inputs from the public and other possible sources, and deal with uncertainties.
 - 5) **Focus**, SEA should be customised according to the characteristics and context of a strategic proposal, and only focus on key environmental issues appropriate for the planning and decision-making at a specified level.
 - 6) **Decision-centred**, SEA teams should provide quality information in an appropriate form in order to help and streamline decision-making.
 - 7) **Wide participation and transparency**, SEA should encourage the public and other stakeholders to actively participate in the decision-making process, and make the process and the outcomes transparent to the public and other parties.
 - 8) **Accountability**, SEA should really improve the environmental performance of a proposed strategic proposal being assessed by minimising negative impacts as well as optimising positive ones.

Among these key factors, **accountability, transparency and participatory** and **early involvement** are the three fundamental factors of SEA application which are broadly recognised by scholars and practitioners of SEA (e.g. Therivel, 2002).

7. Linking SEA and Egyptian spatial planning process

This part revolves around five key questions as follow:

- Do we need a legal provision for SEA or it can be implemented on a voluntary basis?
- If yes, can SEA be integrated into the existing laws or not?
- Who should be responsible for SEA making SEA?
- What is the most appropriate model to integrate SEA into the Egyptian spatial planning process?
- What are the SEA procedures and tasks that be incorporated into key decision-making points in spatial planning.

Regard to the first question 14 out 20 interviewees of the interviews and 65% of respondents of the questionnaires have answered that in the Egyptian context, it will be better if SEA be integrated with an appropriate legal framework for numerous reasons: legal requirements for SEA can be easily shaped to be applicable to different sectors including spatial planning sector; clear legal frameworks will be beneficial for SEA practices in terms of providing a minimum regulatory context or a more prescriptive set of procedures, and a legal basis will help to create basic SEA requirements and standards that can be implemented more effectively. This legal framework will indicate the stakeholders and their responsibilities in applying SEA.

About the possibility of SEA to be integrated into existing laws in Egypt, 13 interviewees and 65% of the respondents of the questionnaire argued that SEA can be integrated without the need of a new law, while 35% thought that SEA should be introduced in a new law. The fact that the majority of the

respondents prefer that SEA can be integrate in an existing law was maybe influenced by the long bureaucratic process of issuing a new law in Egypt. This approach requires numerous agreements and in general takes very long.

When the interviewees were asked how SEA could be introduced into the existing law framework and which institutions should be responsible for its implementation. 12 out of 20 interviewers indicated that it should be included within the existing environment law 4/1994 and its amendments law 9/2009. Eight interviewees suggested SEA could be integrated into the TORs provided by GOPP as guidelines to prepare the strategic plans. GOPP is the institutions legally responsible for planning, developing and implementing spatial plans in the country.

Regard to the authority responsible for making SEA, 14 interviewees suggested that a higher commission for SEA should be established under the umbrella of GOPP in coordination with EEAA. This high commission could ensure that SEA process would be conducted with the maximum transparency. This commission would be in charge of the review and appraisal steps of the plan and recommend or reject both the SEA report and the plan. The higher commission should be established in coordination with EEAA in order to guarantee that SEA studies are taken into account at early stages of the planning process. This commission is also to be made responsible for making decisions regarding the proposed spatial plans based on the findings and recommendations of the SEA document. It is suggested that the GOPP proposes the plan and starts to formulate it (i.e. a strategic plan for a city), and at the same time the commission will initiate the SEA process by investigating whether the plan requires SEA study or not. If the proposed plan requires SEA study, the high commission in cooperation with EEAA should appoint the assessment team to prepare the study.

When the interviewees were asked about the most appropriate model to integrate SEA into the Egyptian planning process, it was identified that there are three models of integration that can be considered. The first model of integration is considered as a pure ex-post assessment tool and completely separated from strategic action preparation. The second is that SEA is partially integrated into strategic action preparation with limited chances of information exchange or sharing. The third is that SEA is fully integrated into strategic preparation.

However, there is a consensus among interviewees that the separate model does not bring the benefits that SEA is supposed to deliver. Integrated planning receives the highest support, but the interviewees thought that it would be workable only if the SEA system could be established and excellent institutional coordination achieved. There were significant differences among interviewees in their support for this idea.

Considering that Egyptian governments from the central to the local do not have experience of fully integrating environmental considerations into planning process, and fully integrating SEA into spatial planning would need significant changes to the current administrative structure, this change will not happen in the short term. Alternatively, 70% of interviewees felt that a more secure and feasible way at present would be to partially integrate SEA into strategic action preparation and decision making. The partially integrated model usually runs parallel to the main urban planning process (see Fig. 4). It can work well if communications with the main spatial planning process are excellent, and which include value sharing, institutional coordination, professional integration and procedural incorporation.

With regard to the SEA procedures and tasks that can be incorporated into key decision-making points in spatial planning, Table 2 shows procedural guidelines for partial integrated model for spatial planning in Egypt, and how disciplinary planners can work together and link various decision making points to the specific planning stages. Each planning stage has specific questions to clarify its links to decision making. The possible sub-decisions needed to be made are also identified. Once the SEA report is concluded it is submitted for the commission for reviewing. If approved both the SEA report and the final draft of the plan are submitted to the approval authority for a final decision whether it is to be implemented, re-planned or downrightly rejected.

8. Conclusions

The consideration of environmental issues within the spatial planning process in Egypt is weak and faces numerous obstacles in terms of unclear mechanisms, insufficient environmental studies

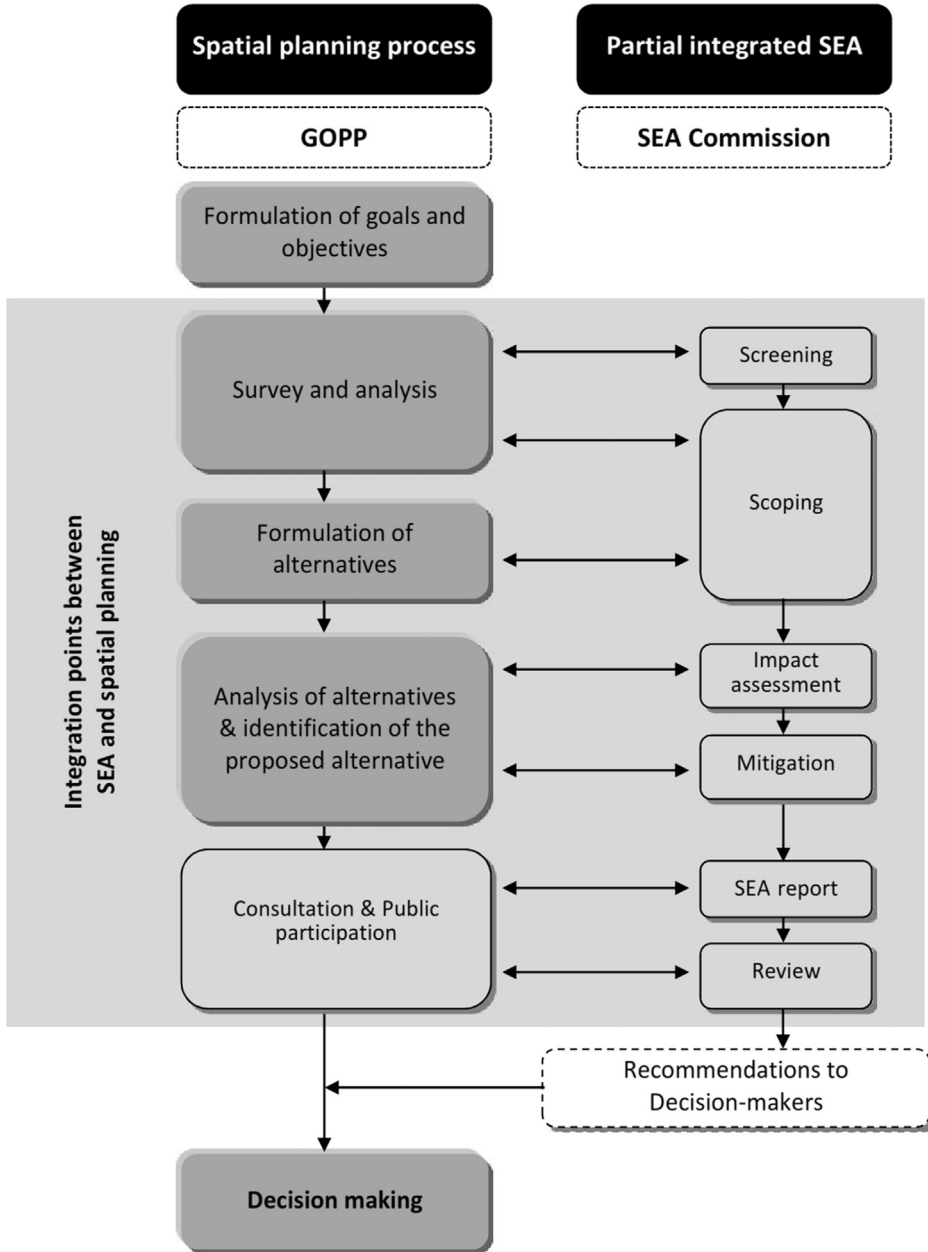


Fig. 4. A partial-integrated approach to integrate SEA into spatial planning process in Egypt.

including low priority for the environmental aspects, lack of integration during the different phases of the planning phases, and lack of coordination between the environmental and planning authorities.

There is a major conflict in the planning process in Egypt in the sense that there is no relation between the environmental studies conducted during the preparation phases and how these studies influenced the final decision to accept or reject the draft plan.

Table 2
The integration between the partial integrated SEA with spatial planning.
Source: Developed by the author

Spatial planning procedure	Spatial planning task	Incorporated SEA procedure	Incorporated SEA task	Planning question	Sub-decision need to be made
Survey and analysis	Survey and data collection	Screening	Identify the need of SEA	<ul style="list-style-type: none"> Is SEA necessary for the proposed urban PPP? Are the proposed PPP aimed towards the established environmental or sustainable PPPs? 	<ul style="list-style-type: none"> Identify the legal requirements of SEA Identify the consistence of PPPs Identify the consistence of planning
	Analysis, proposals and evaluation	Scoping	Identify environmental, social, economic and sustainability issues	<ul style="list-style-type: none"> What are the benefits and consequences of action or inaction? What is the PPP contents and influence are? Is there any relevant reference? 	<ul style="list-style-type: none"> Identify the assessment requirements Identify the short-term impacts Identify the long-term or cumulated impacts Identify the assessment scale
Formulation of alternatives	Identify feasible alternatives		Identify strategic solutions to solve the identified problems	<ul style="list-style-type: none"> What alternative may lead to the set scenarios, objectives or targets? 	<ul style="list-style-type: none"> Identify the strategic (environmental friendly or sustainable) alternatives like policy instrument types, transport modes or corridor selection.
Analysis of alternatives	Identify solutions addressing and responding to priority issues	Impact assessment	Overall evaluation	<ul style="list-style-type: none"> What are the established targets and indicator system for the impacts? 	<ul style="list-style-type: none"> Apply the established assessment approaches
Formulating the proposed alternative	Adjusting selected alternatives	Mitigation measures development	Develop mitigation measures	<ul style="list-style-type: none"> What are the weak parts of the selected alternatives? Is there any-recovery impact? How to mitigate the weaker parts of the selected alternatives? 	<ul style="list-style-type: none"> Identify the potential mitigation measures Selecting the effective mitigation measures
Strategic action draft	Reporting	SEA report	Alternatives comparison Synthesising analysis	<ul style="list-style-type: none"> What is the performance of, and consequence to each alternative in the priority issues? Which suggested actions should be 	<ul style="list-style-type: none"> Report the strengths and weaknesses of the alternatives Report the recommendations

Table 2 (continued)

Spatial planning procedure	Spatial planning task	Incorporated SEA procedure	Incorporated SEA task	Planning question	Sub-decision need to be made
		Review	Results and recommendations	<ul style="list-style-type: none"> ■ taken? ■ What are the priorities of the selected actions? ■ Is the proposed PPP or other alternatives environmentally feasible or sustainable? ■ What are the recommendations that respond to the analysis and to public consultation? 	<ul style="list-style-type: none"> ■ Report the implementation plan ■ Identify the independent and overall assessment results of the proposed PPP and the alternatives ■ Develop recommendations
Consultation & public participation	Consideration of public participation on the strategic action	Consultation & public participation	Consultation with relevant actors	<ul style="list-style-type: none"> ■ Which section of the population will be directly or indirectly affected? ■ What is the specific and general public opinion? 	<ul style="list-style-type: none"> ■ Identify the target groups or population ■ Identify the specific population and general public opinions

The promotion of better practices for sustainable development, integration of the environmental issues at early stages of planning and decision making process, improving the quality of Egyptian environment, enhance the public involvement practices in the planning process and contribution for improving the efficiency of the decision making process were the main benefits of integrating SEA into the spatial planning process found in the research.

The absence of SEA legislation in the national environmental legal framework of the country was appointed as the most important constraint followed by insufficient political will, lack of capacity in SEA and unavailable information.

According to the results, the best way to introduce SEA into the spatial planning process in the Egyptian context will be integrating SEA in an appropriate legal framework. Among the cited reasons we can mention: a legal requirements for SEA can be easily shaped to be applicable to different sectors including spatial planning sector; a clear legal frameworks will be beneficial for SEA practices in terms of providing a minimum regulatory context or a more prescriptive set of procedures, and a legal basis will help to create basic SEA requirements and standards that can be implemented more effectively.

The majority of the interviewees said that SEA could be integrated without the need of a new law and the existent environment law 4/1994 and its amendments law 9/2009 were cited as the ideal laws to include SEA.

As a contribution for the development of a future legal institutional framework for Egypt the authors using the finds of this research, the international literature and their own experience on the subject propose an institutional framework model. The model suggests that a higher commission for SEA should be established under the umbrella of GOPP in coordination with EEAA. This high commission could ensure that SEA process would be conducted with the maximum transparency. This

commission would be in charge of the review and appraisal steps of the plan and recommend or reject both the SEA report and the plan.

9. Recommendations

Drawing up the research conclusions, the authors suggest some recommendations to the responsible agencies as well as to other involved stakeholders in order to make the integration of SEA into the spatial planning more successful. It is very important that environmental considerations be taken into account at early stages of the different tiers of the spatial planning process in Egypt. On the basis of these results, it is recommended that SEA is the best instrument to promote this integration.

Political will is a key factor in shaping policy practices. It is imperative that this political will would be developed in Egypt in order to prioritise environmental issues to achieve a sustainable development and better quality of life.

It is recommended that SEA should be introduced into the legal framework that would make it obligatory. The current environment law 4/1994 and its amendments law 9/2009 that could be changed to accommodate SEA provisions. This will avoid the long bureaucracy to create and approve a new law.

Lack of coordination between different institutions horizontally and vertically is an obvious burden in Egypt. Therefore, the Coordination between the different government agencies involved in the planning and policy making process such as GOPP, EEAA and sector ministries should be improved upon. Strengthening Capacity is another vital issue for SEA to be integrated into the spatial planning in particular.

Finally, what is what Egypt need to effectively implement the SEA of policies, plans and programs into its legal and institutional frameworks? We propose the following course of action:

- First, extend the EA research as a line of research of critical importance for the country.
- Second, define the SEA ideology to follow strategic approach to develop the best methodological approach for Egypt own conditions.
- Third, understand in depth the decision-making processes in Egypt, in the three levels of government competence: National, Regional and Local.
- Fourth, conduct a comprehensive analysis of the Egyptian legal framework to propose the best reforms that should be needed.
- Fifth, test the legal and institutional frameworks with the SEA methodology proposed to document the advantages and improve the limitations that will emerge.
- Sixth, establish a whole new institutional arrangement to conduct the SEA in Egypt, but with the attribution to access to the information needed to perform an SEA study in any level (national, regional and local), and to promote an effective public participation in the decision-making processes.

References

- Abdel Wahab, R., 2003. Sustainable development and environmental impact assessment in Egypt: historical assessment. *Environ.* 23, 49–70.
- Abul-Azm, A.G., Sherif, Y. & Abou Elailah, D. 2002, A proposed approach to assessing eia system performance in Egypt. In: Proceedings of the 22nd Annual Conference Event of The International Association For Impact Assessment. The Hague.
- Ahmed, K., Mercier, J.R., Verheem, R., 2005. Strategic Environmental Assessment-Concept and Practice. *Environment Strategy Notes*, World Bank1–6.
- Alshuwaikhat, H.M., 2005. Sustainable planning: the need for Strategic Environmental Assessment-based municipal planning in Saudi Arabia. *J. Environ. Assess. Policy Manag.* 7 (3), 387–405.
- Badr, E-SA, 2009. Evaluation of the environmental impact assessment system in Egypt. *Impact Assess. Proj. Apprais.* 27 (3), 193–203.
- Brown, A., Therivel, R., 2000. Principles to guide the development of Strategic Environmental Assessment methodology. *Impact Assess. Project Apprais.* 18, 183–189.
- Caratti, P., Dalkmann, H., Jiliberto, R., 2004. *Analysing Strategic Environmental Assessment*. Edward Elgar, Cheltenham.
- Fischer, T., 2007. *Theory and Practice of Strategic Environmental Assessment: Toward a More Systematic Approach*. Earthscan, UK.

- Fischer, T.B., Kidd, S., Jha-Thakur, U., Gazzola, P., Peel, D., 2009. Learning through EC directive based SEA in spatial planning? Evidence from the Brunswick region in Germany. *Environ. Impact Assess. Rev.* 29, 421–428.
- Fischer, T., Seaton, K., 2002. Strategic Environmental Assessment: effective planning instrument or lost concept. *Plann. Pract. Res.* 17, 31–44.
- Goodstadt, V. & Partidário, M.R. 2010, Spatial Planning and Environmental Assessments, in *A Quick Guide to the Economics of Ecosystems and Biodiversity for Local and Regional Policy Makers*. (Chapter 6).
- Joao, E., 2005. Key principles of SEA. In: Schmidt, M., Joao, E., Albrecht, E. (Eds.), *Implementing strategic environmental assessment*. Springer, Berlin.
- Jones, et al., 2005. *Strategic Environmental Assessment and land-use Planning: An International Evaluation*. Earthscan, London.
- Jones, C., Baker, M., Carter, J., Jay, S., Short, M., Wood, C., 2005. *Strategic Environmental Assessment and land-use Planning: An International Evaluation*. Earthscan, London.
- Kjörven, O., Lindhjem, H., 2002. Strategic Environmental Assessment in World Bank Operations; Experience to Date–Future Potential. The International Bank for Reconstruction and Development/THE WORLD BANK, Washington, D.C..
- Morrison Saunders, A., Fischer, T., 2006. What is wrong with EIA and SEA anyway? A sceptic's perspectives on sustainability assessment. *J. Environ. Assess. Policy Manag.* 8 (1), 19–39.
- Runhaar, H., Driessen, P., 2007. What makes strategic environmental assessment successful environmental assessment? the role of context in the contribution of SEA to decision making. *Impact Assess. Proj. Apprais.* 25 (1), 2–14.
- Sadler, B., Verheem, R., 1996. *Strategic Environmental assessment: Status, Challenges and Future Directions*. Ministry of Housing, Spatial Planning and the Environment, The Hague, The Netherlands.
- Stinchcombe, K., Gibson, R., 2001. Strategic Environmental Assessment as a means of pursuing sustainability: ten advantages and ten challenges. *J. Environ. Assess. Policy* 3, 343–372.
- Stoeglehner, G., Wegerer, G., 2006. The SEA-directive and SEA-protocol adopted to spatial planning: similarities and differences. *Environ. Impact Assess. Rev.* 26, 586–599.
- Therivel, R., 2002. *Implementing the SEA Directive: Analysis of Existing Practice*, The South West Regional Assembly. Levett-Therivel sustainability consultants, North Hinksey Lane, Oxford.
- Therivel, R., Partidário, M.R., 1996. *The Practice of Strategic Environmental Assessment*. Earthscan, London.
- Therivel, R., Walsh, F., 2006. The Strategic Environmental Assessment directive in the UK: 1 year onwards. *Environ. Impact Assess. Rev.* 26, 663–675.