



Evaluating Urban renewal priority areas in Taiwan: a case study of Tainan

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Abstract

Urban regeneration projects have been considered as the major catalyst to revitalize deprived urban areas socially and economically. Proposing area-based comprehensive urban regeneration strategies are emphasized global wide. Many researches confirmed that urban renewal priority areas should be based on physical environment and the economic, social needs of local residents (Lee and Chan,2009; Council, 2006; DETR,1999a), the sustainability of regional development (DETR, 1999b; DOE,1994), and level of improvements of living quality (DETR, 2000; ODPM,2003) in order to ensure long-term benefits for the whole area. In Taiwan, although the idea of area-based regeneration projects has been advocated by many researchers, in practical, the main considerations for designating “priority areas” regulated by the current Urban Renewal Act 1999 are still dominating the decision making process. Blight areas bigger than one-block in size with worse deprived social and physical environment, near future major public constructions, or listed historical buildings are recommended for designation. Since 1999, there has been over 300 urban renewal projects proposed in Taiwan, but most are small-scale private sector-led housing development projects located in the Taipei City. It has further resulted in issues such as gentrification, housing affordability and social conflicts between rich and poor. In 2009, the central government has announced 30 priority areas and Tainan city government has announced 26 priority areas to promote urban regeneration by investing large amount of public funding. However, the criteria for designation include large area of public lands, major facilities and historic heritages. Clearly, the government is still based on the current status and easiness of implementation to designate the priority areas without taking into account the future demands, social–economic trends, and possible benefits from the regional development perspectives. Hence, this study intends to use analytical hierarchy process to identify evaluating criteria in terms of the physical environment, social and economic development potential, the future investment returns and other factors

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for designating urban renewal priority areas. A series expert survey will be conducted to confirm designated principles and establish urban renewal priority areas weight indicators framework as an assessment tool. Finally, 26 existing priority areas in Tainan city will be examined by the indicators to further review the appropriateness of the designation. The final result of this study is expected to provide recommendations for future legal and policy amendments of urban regeneration in Taiwan.

Key words: area-based regeneration projects, priority areas, weight indicators framework

1. Introduction

Urban areas often face periods of decline, and thus require government action to regenerate them. Urban renewal plans carried out in countries such as Britain, America, Germany, and Japan, work by considering urban economic, social, and industrial factors in order to improve the lives of local residents promote urban and regional sustainable development. At the meantime, hope to enhance the environment, economic and social development and revitalize urban function by integrated urban renewal strategies to show the vitality of urban sustainable development and energy for the urban to bring long-term benefits.

Taiwan's efforts at urban renewal have mostly focused on improving the physical environment of buildings and structures in a number of small-scale projects, chosen based on the degree of environmental decay and financial benefits, with few benefits for local residents. The main object is to reconstruct new building and redistribution of the real estate property proportion. In addition, such projects do not bring new development opportunities to the city, and can even cause more serious urban social issues, such as the problem of gentrification, housing affordability, and a widening gap between rich and poor. It is thus necessary to rethink urban renewal area selection criteria and strategies in order to improve the overall city environment and achieve sustainable development, and not only works to make buildings more aesthetically pleasing. In recent years, the central and local governments in Taiwan have chosen a number of urban renewal priority areas, hope to boost the overall urban improvement through the implementation of urban renewal, but these efforts

have had limited success, and thus this work aims to improve the selection criteria of urban renewal priority area used to achieve more beneficial outcomes.

This study is divided into two parts; the first collects the priority area selection criteria and evaluation indicators from literature review, and the second focuses on sorting out a criteria system that are more suitable for use in Tainan City.

2. Literature Review

2.1 Urban Regeneration and Area-Based Regeneration

Roberts and Sykes, (2000) defined urban renewal as a process of adopting fully integrated points of view and actions to deal with urban problems, in order to enhance the physical economic, and social environments of urban areas. Roberts (2000) reviewed the literature on urban renewal from the 1950s to the 1990s (Table 1). In the 1950s such works were based on developing master plans and suburbs to reconstruct old urban areas. This work continued in the 1960s, although efforts also began to attempt to restore the original appearance of the urban environment. With the problem of urban sprawl due to the rise of suburbs in the 1970s, attention then turned to in-situ redevelopment and neighborhood planning. In the 1980s, urban renewal efforts focuses on enhancing economic competitiveness of such areas, while in the 1990s more attention was put on the idea of sustainable development, with more comprehensive policies and the implementation of integrated programs. Today, urban renewal efforts are often used to address a number of aims at the same time, including employment, economic competitiveness, social issues, community issues, urban vacant spaces, and environmental degradation, as well as achieve the goal of sustainable development.

Taiwan's current urban renewal policies are regulated under the Urban Renewal Act, which aims to promote better urban land development and utilization plans and the recovery of urban functions, which include improving the living environment and promoting the public interest, pursuant to the Urban Renewal Act procedures within the scope of reconstruction, renovation or maintenance measures in urban planning areas.

Table1. Urban renewal main theme evolution from 1950s to 1990s

Time	Trend
1950-1960	Main themes were reconstruction of older areas and towns and cities based on a master plan and suburban growth
1960-1970	1950s theme continued and some attempts to conduct rehabilitation
1970-1980	Focus on in-situ renewal and neighborhood schemes and suburban development continued
1980-1990	Major schemes of development and redevelopment which aimed mostly at improving the economic competitiveness of cities were developed
1990-2000	More sustainable approach and more comprehensive form of policy and practice was enhanced and more emphasis on integrated action was given
2000-now	Aim to address issues that are associated with change in the economy and employment, economic competitiveness, social exclusion, community issues, vacant and deteriorated sites in cities, new land and property requirements, environmental quality and sustainable development, etc.

Source: Roberts, 2000

The concept of area-based regeneration first arose in 1930s Britain, when it was used on a regional basis to address the problem of urban recession in a short period of time. The main factors triggers area-based regeneration is the national policy, public-private partnership, public investments in empowerment relations, community involvement and community capacity. Area-based regeneration development strategies aim to solve specific problems in a region, such as industrial land use and slums, as well as to develop an area's potential, such as with the development of a central business district and re-use of idle land. Area-based regeneration policies have long been used as a regional development strategy by central governments, and government need to looking for necessary funding to carry out the project. There have been much fewer local, bottom-up community efforts in this regard (Dobbs, and Moore, 2002). Current area-based regeneration programs often aim to reduce the unemployment rate, stimulate local economic development, reduce crime, improve the quality of the environment,

promote social integration and increase local social capital, and increase participation in cultural and sports activities (Gabrielsen, 2008). Table 2 summarizes the objectives, methods and evaluation criteria for area-based regeneration that were set out in Meyer (1998).

Table2. Objectives, methods and evaluation criteria for area-based regeneration

Objectives	Environmental objectives	Better regional environmental conditions
	Economic objectives	Improved area-wide attractiveness to capital
	Community objectives	Reduced community disamenities and specific economic improvements
	Actual consultation on local community objectives	Potentially extensive;(although development agency may listen but not act on local concern)
Methods	Leads actor	Public agencies and Quasi-public authorities
	Public site assembly, preparation	Potentially extensive to achieve area change
	Public support mechanism	Complementary investments, planning changes
Evaluation criteria	Time horizon	Lon allowing time for expected spillover effects
	Policy efficacy	New capital flows into area; increase in area economic activity, incomes, and property value
	Public efficiency	Maximum leverage on public funds
	Public effectiveness	Increase in area economic activity, household incomes; reduction in area disamenities

Source: Meyer, 1998

2.2 Priority Areas

Taiwan's criteria for the choice of priority areas for urban renewal are based on the Urban Renewal Act (1999). Under any of the following circumstances, the County (City) authority can designate an area as a priority renewal target:

1. Buildings that are deteriorated and not having a fireproof structure or the space between neighboring buildings is insufficient, and the building is hazardous to the public safety.
2. Buildings those are in a dilapidated, dangerous condition that have been badly built or roads that are curved and narrow or in any way hazardous to public safety.

3. Buildings that do not meet the urban function.
4. Buildings those are not coordinated with important development projects.
5. Buildings that have historical, cultural, artistic, or other memorable value that urgently require preserving and maintaining.
6. Buildings which have a bad living environment as to constitute a hazard to public health or peace and order in society.

In 2002, the Institute for Urban Renewal Research Foundation in Taiwan stated that the key areas for urban renewal projects should include regional transportation hubs, old residential communities, the old central business district, downtown industrial districts and military barracks, post-disaster reconstruction areas and waterfront areas. In 2009 the Central Government and in 2011 the Tainan City Government both proposed urban renewal priority areas which focus on large areas of public land, and that strategic re-development efforts should focus on spaces near railway and MRT stations or other major construction and development areas, as well as work to preserve historical areas.

The international research literature indicates that the selection criteria for urban renewal priority areas should integrate the concepts of economic, environmental and social sustainability (Chan and Lee, 2007). In addition, renewal efforts should aim to make working and living areas more attractive (DOE, 1994), and improvements to the physical environment should meet the economic and social needs of the community (DETR, 1999, 2000). From a more comprehensive perspective, not only physical environment improvement but also economic and social development are considered as a sustainable development vision trying to figure out the maximum benefit for the urban and its surrounding area. Urban renewal drives urban development and enhances the quality of living and working environment, economic development, social welfare and other.

2.3 Indicators for Evaluating Urban Regeneration Areas

Evaluation criteria are needed to select areas for urban renewal. Many urban renewal area assessment indicators have sustainable development as the major goal of such projects. Hemphill, Berry and McGreal (2004) reported that the performance indicators used to measure sustainable urban renewal include factors such as the

economy and employment, resource use, building and land use, transport and mobility, and the community benefits, and these are considered in the criteria used to evaluate the cases in United Kingdom, Ireland and Spain. Chan and Lee (2007a; 2007b), writing in Hong Kong, also proposed a system of indicators to assess the sustainability of view urban renewal areas, and these include environmental, economic, and environmental sustainability. These indicators aim to provide communities with a high degree of operating convenience, open spaces, appropriate architectural forms, efficient and safe public transport and walking environments, good public facilities, community involvement, and retention of local identity. Amna Salman and Salman Qureshi (2009) examined the metropolitan area of the city of Karachi, and considered the issues of environmental, economic, social sustainability, as well as problems associated with buildings, noise, traffic, water, air pollution, traffic safety, healthy and mobility. The literature on urban regeneration area evaluation indicators is summarized in Table 3.

Table3. Summary of the literature on urban regeneration area evaluation indicators

Author	Case Study Area	Evaluation Criteria	Evaluation Indicators
Hemphill, Berry and McGreal (2004)	Belfast, UK Dublin, Ireland Barcelona ,Spain	Economy and work	<ul style="list-style-type: none"> ● Number of jobs and enterprises created ● Quality of jobs ● Performance of incentive mechanisms ● Leverage ratio
		Resource use	<ul style="list-style-type: none"> ● Reclamation of building material ● Retention of environmental features ● Water disposal ● Waste minimization ● Energy efficiency ● Conservation of built heritage resources ● Incorporation of environmental design ● Performance of environmental management

		Buildings and land use	<ul style="list-style-type: none"> ● Ratio of open spaces to build form ● Ratio of redeveloped buildings to new build ● Reclamation of contaminated land ● Density levels in relation to plot size ● Mixed use combination ● Occupancy levels ● Quality of final product ,urban design ,public space ● Usage of public space
		Transport and mobility	<ul style="list-style-type: none"> ● Land devoted to roads ● Land dedicated to pedestrians ● Reorientation of road network ● Work traveling habits ● Leisure traveling habits ● Public transport links ● Car-parking provision ● Integration of land use and public transport
		Community benefits	<ul style="list-style-type: none"> ● Access to open space, leisure/retail/education /medical/entertainment/cultural facilities ● Housing affordability ● Community ownership ● Community group involvement
Chan and Lee (2007)	Hong Kong	Environmental Sustainability	<ul style="list-style-type: none"> ● Access to work ● Sense of community ● Green design ● Building form ● Provision of open space ● Rehabilitation of repairable property
		Economic	<ul style="list-style-type: none"> ● Access to public facilities

		Sustainability	<ul style="list-style-type: none"> ● Green design ● Provision for establishment of different business ● Community involvement ● Compatibility with neighborhood ● Convenient, efficient & safe environment for pedestrians & public transport users
		Social Sustainability	<ul style="list-style-type: none"> ● Provision for meeting special needs of disables, elderly/children ● Green construction ● Conservation/improvement of local distinctiveness ● Availability of local employment ● Access to open space ● Adaptability of non-domestic development to the changing need
Amna Salman and Salman Qureshi (2009)	Karachi, Pakistan	Environmental	<ul style="list-style-type: none"> ● Buildings – construction materials, energy and land use ● Noise – number of noise complaints ● Transportation – construction material ● Water – construction material use, energy use, land use, chemical usage, contaminant ● Air-number of air pollution complaints
		Economic	<ul style="list-style-type: none"> ● Buildings-capital and operation and maintenance costs, affordability of housing, expenditures in research and development
		Social	<ul style="list-style-type: none"> ● Transportation – capital and

			<p>operation and maintenance costs, expenditures in research and development, choice of mode, time of travel</p> <ul style="list-style-type: none"> ● Water - -capital and operation and maintenance costs, service fees, access to portable water and sanitation service, quality of water ● Safety –feeling insecurity ● Mobility – number of people injured in traffic accidents ● Buildings – supply of housing ● Health -- indoor air quality, public satisfaction
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Source: Hemphill, Berry and McGreal, 2004; Chan and Lee, 2007; Amna Salman and Salman Qureshi, 2009

Hence, from the literature review, we can clearly understand in Taiwan the mechanism of choosing urban renewal priority area is still limited in a narrow scale, instead of considering a comprehensive scale of the city like other country have done. Since urban renewal in Taiwan has become a hot issue, public sector choosing priority area to lead other private-led urban regeneration move up to act is a big issue need to concern. For the reason mention above, this study is going to base on Taiwan and Tainan’s overall condition and circumstance, trying to sort out a bunch of indicators to evaluate the urban renewal priority area which proposed by government. Follow up study may try to do thorough study of indicator choosing and establish a priority area assessment indicator system.

3. Methodology

This study is mainly based on a literature review of the definition of urban renewal and area-based urban regeneration, the various selection criteria and evaluation indicators used for urban renewal priority area projects research. In addition, joining field survey to observe Tainan city’s designated urban

renewal priority area to clarify the physical environment conditions and the local characteristic in order to filter the urban renewal area to assess. Follow up research will adapt analytical hierarchy process and conduct expert survey to confirm designated principles and establish urban renewal priority area weight indicators frameworks as an assessment tool. Also examines how such projects are selected in Tainan City, with the aim of providing better criteria for the selection of priority areas.

4. Study Area

Tainan City (Figure 1), one of Taiwan municipalities, has nearly 400 years of the development, it's Taiwan' earliest developed area while it has a rich historical urban environment, structure and richness of culture relic, it also faces a number of problems in conservation and development. In 2011, old Tainan City and Tainan county were merged to become a municipality, with the goal of achieving better and more sustainable economic, cultural and environmental development, while still persevere its historical characteristics.



Figure1. Taiwan and Tainan area

5. Result

Due to relatively low real estate values, there have been some problems in attracting developers to Tainan, and thus there has been unbalanced development between the urban and rural areas. Also, the preference for housing type, mostly urban renewal approach emphasis on reconstruction, lack of supporting mechanism for renovation and maintenance, the public lack of related knowledge in urban renewal leads hard to handle themselves, confusion of historic city's image and modern image of the city, a large-scale reconstruction may create conflict between maintained the historical image of the ancient capital and brand new development of Tainan, since it's often encounter difficulties in the implementation of urban renewal.

Integrated consideration of the current conditions and the implementation of urban renewal in Tainan City, to effectively vibrant city area in various aspects of

functional activation, must be led by the public sector to conduct urban regeneration, but also hope that through the means of urban renewal can promote urban sustainable development. The goal of the implementation of urban renewal in Tainan City are both the overall sustainable development areas and keep well preserve of urban history and culture, by means of area-based urban regeneration to carry out.

In examining urban renewal efforts in Tainan City, this study considers the following three objectives: environmental, economic and social sustainable development. These will be used along with the ideas of urban history and cultural maintenance to produce a set of criteria to evaluation urban renewal priority areas (Table 4). The three objectives stated above each have eight assessment indicators, giving a total of 24 indicators preliminary chosen to do assessment.

Table4. Urban regeneration priority area evaluation indicators

Sustainable development	Environment dimension	Building form&construction material
		Open space
		Heritage conservation
		Retention of environmental features
		Public lands
		Ratio of redeveloped buildings to new build
		Mixed use
		Green design
	Economic dimension	Number of jobs created, new enterprise created
		Quality of jobs
		Availability of local employment
		Encourage local business
		Potential investment
		Unemployment rate
		Incentive mechanism for economic activities
		Leverage ratio
	Social dimension	Community involvement
		Compatibility with neighborhood
		Housing affordability
		Meeting special needs of disables, elderly/children
		Conservation/improvement of local distinctiveness
		Historical conservation
		Public transportation
		Coordinate with public policy

6. Conclusion

By the current implementation of urban renewal and physical environment situation can understand the renewal of the single building in Tainan is not much incentive to private developers, only to put the vision into the overall region of Tainan of urban renewal is more able to reach the purpose of urban regeneration. The

private sector is not making much effort and reluctant involvement in the process of urban renewal in Tainan City, and thus moves in this area must rely on the public sector. It's not only can drive urban renewal process more progressed but also can attract private sector's investment to have the city an opportunity through the urban regeneration process.

Therefore, based on the goal of sustainable development and the preservation of the Tainan's history and culture, this work presents a number of assessment indicators can implement to identify the priority of the priority areas for urban renewal. A future study will conduct an expert questionnaire and hierarchical analysis of these indicators, and construct a framework of weighted indicators.

7. Reference

1999. Urban Renewal Act Taiwan: Construction and Planning Agency Ministry of the Interior, Taiwan Central Government

CHAN, E. H. W. & LEE, G. K. L. 2007a. Contribution of urban design to economic sustainability of urban renewal projects in Hong Kong. *Sustainable Development*, 10, 122-130.

CHAN, E. H. W. & LEE, G. K. L. 2007b. Design considerations for environmental sustainability in high density development: A case study of Hong Kong. *Environment, Development and Sustainability*, 11, 359-374.

COUNCIL, S. M. B. 2006. Sefton Unitary Development Plan 2006. *In*: COUNCIL, S. M. B. (ed.).

DETR 1999a. Towards an Urban Renaissance-Final Report of the Urban Task Force. *In*: DETR (ed.). London: DETR.

DETR 1999b. A better quality of life-Strategy for sustainable development for the United Kingdom. *In*: DETR (ed.). London: HMSO.

DETR 2000. Our Towns and Cities: The Future Delivering an Urban Renaissance. *In*:

- DETR (ed.). London: HMSO.
- DOBBS, L. & MOORE, C. 2002. Engaging communities in area-based regeneration: the role of participatory evaluation. *Policy Studies*, 23, 157-171.
- DOE 1994. Sustainable Development: The UK Strategy. *In: DOE (ed.)*. London: HMSO.
- GABRIELSEN, G. V. 2008. Area-based strategies and urban regeneration. AHO The School Of Architecture And Design.
- HEMPHILL, L., BERRY, J. & MCGREAL, S. 2004a. An indicator-based approach to measuring sustainable urban regeneration performance: Part 1, conceptual foundations and methodological framework. *Urban Studies*, 41, 725-755.
- HEMPHILL, L., BERRY, J. & MCGREAL, S. 2004b. n indicator-based approach to measuring sustainable urban regeneration performance: Part 1, conceptual foundations and methodological framework. *Urban Studies*, 41, 725-755.
- HEMPHILL, L., MCGREAL, S. & BERRY, J. 2004c. An indicator-based approach to measuring sustainable urban regeneration performance: Part 2, empirical evaluation and case-study analysis. *Urban Studies*, 41, 757-772.
- LEE, G. K. L. & CHAN, E. H. W. 2009. Indicators for evaluating environmental performance of the Hong Kong urban renewal projects. *Facilities*, 27, 515-530.
- MEYER, B. P. 1998. Accounting for differential neighborhood economic development impacts in site-specific or area-based approaches to urban brownfield regeneration. University of Louisville.
- ODPM 2003. Sustainable Communities-Building for the Future. *In: ODPM (ed.)*. London.
- ROBERTS, P. 2000. The evolution, definition and purpose of urban regeneration. *In:*

ROBERTS, P. & SKYES, H. (eds.) *Urban Regeneration A Handbook*.
London: Sage Publications.

ROBERTS, P. & SKYES, H. 2000. Current Challenges and Future Prospects. *In*:
ROBERTS, P. & SKYES, H. (eds.) *Urban Regeneration A Handbook*.
London: Sage Publications.

SALMAN, A. & QUERSHI, S. 2009. *Indicators of sustainable urban development:
A review of urban regeneration projects in Karachi, Pakistan* [Online].
Available: www.herodot.net/conference/Ayvalik/papers/geog-04.pdf.