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**Urbanization, Urban Environment and Land Use:  
Challenges and Opportunities**

An Issue Paper

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**Introduction**

Urbanization has been the dominant demographic trend, not only in the Asia-Pacific region, but also in the entire world, during the last half century. With the high pace of social and economic development in Asia and the resulting growth of city and town population, lack of infrastructure, congested traffic, environmental degradation and a housing shortage became the major issues faced by cities and towns in their sustainable development.

The Asia-Pacific Forum for Environment and Development (APFED) reviewed the environment and development issues facing in the Asia-Pacific Region and identified five major issues that require priority attention. Based on discussions at the past two substantive sessions, APFED formulated its Recommendations and a Message to the World Summit on Sustainable Development (WSSD, in which APFED committed to launch the new partnership initiatives.

One of the topics that APFED attaches high importance and is therefore covered by its Recommendations is Urbanization. APFED recommended to take an integrated approach to manage urbanization (Recommendation E(1)) and strengthen local initiatives in the management of urban environment (Recommendation E(2))<sup>1</sup>. APFED, however, has not

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<sup>1</sup> The APFED recommendations on urbanization are:

**(E1) Encourage countries in the region to take an integrated approach to manage urbanization;**

- integrate land use planning; infrastructure and services development; recycling of solid wastes; promotion of economic efficiency in production and services; human and natural resources management; and environmental conservation as well as rural/urban linkages in policy formulation to

discussed the urbanization in a comprehensive and detailed manner.

This paper has been prepared to facilitate expert discussion to identify the critical areas of concerns regarding urbanization that should need most urgent attention by APFED, and to identify subsequent actions by APFED that should effectively tackle those critical concerns, within its framework of high-level commitments.

According to the prior consultation among APFED members and advisors, the primary focus of the present expert group meeting is set for systematic and better management of urbanization through sustainable land use policies and tools, taking into account thematic coherence with the preceding session focusing on rural land management. Hence, issues concerning the intra-urban management of the environmental quality and human health, as well as development of specific infrastructure and services are a bit outside our scope. These issues have been extensively discussed in other forum, such as the the Ministerial Conference on Environment and Development in Asia and the Pacific 2000 and the World Summit on Sustainable Development (WSSD) Local Government Session.

### **Urbanization – An Ongoing Process**

Over the past half century, a great rural-to-urban population shift has occurred and the process of urbanization (the concentration of people and activities into areas classified as urban) is set to continue well into the 21st century. Major demographic evidence has indicated that already the Asia-Pacific region is well advanced in the transition from predominantly rural to predominantly urban societies. Although population growth rates have slowed down in many countries for the past decade, 62 percent of the world's population will live in urban areas by the year 2020, while the Asia-Pacific Region will contain about 49 per cent of that urban population and will have contained a level of urbanization of 55 per cent. An additional 1.2 billion people will be living in the urban centers of the Asia-Pacific region by 2020.

It is projected that some of the big countries of the region like China, Indonesia and Pakistan where current urbanization levels are below 50 per cent, will cross this figure by the next quarter of the century. In 1990, seven of the world's fourteen megacities were located in the

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- manage urbanization;
  - develop a proper institutional framework to promote responsibility and accountability, as well as participation and partnerships amongst a wide range of stakeholders at national and local levels.
- (E2) Strengthen local initiatives in the management of urban environments;**
- enhance the capacities of local governments, civil society, community groups and the private sector and strengthen initiatives and partnerships to solve urban environmental problems
  - promote inter-city cooperation to encourage transfer of successful policy and technology measures, know-how packages and sustainable urban development models, such as through the Kitakyushu Initiative for a Clean Environment.

region, by 1996 the number of megacities in the region rose to nine and it is predicted that there would be eleven - twelve megacities in the region by early 2000<sup>2</sup>.

There is a strong positive link between national levels of human development and urbanization levels, while cities spearhead their countries' economic development, transforming society through extraordinary growth in the productivity of labour and promising to liberate the masses from poverty, hunger, disease and premature death. However, the implications of rapid urban growth include increasing unemployment, lack of urban services, overburdening of existing infrastructure and lack of access to land, finance and adequate shelter, increasing violent crime and sexually transmitted diseases, and environmental degradation. Even as national output is rising, a decline in the quality of life for a majority of population that offsets the benefit of national economic growth is often witnessed. Urbanization thus imposes significant burden to sustainable development.

### **Problem Focus - Challenges of Urbanization**

#### *Environmental Implications*

It should be noted that urban growth has a number of positive impacts on the environment and human well-being, i.e. higher population densities mean lower per capita costs of providing energy, health care, infrastructure and services. Also, urbanization has historically been associated with declining birth rates, which reduces population pressure on land and natural resources. Despite all these positive impacts, almost all major cities of the region are increasingly plagued by environmental problems. Some major aspects are as follows:

- (a) As a direct result of urbanization, great threat to health and safety in cities comes from water and air pollution, especially at the households and community levels. While ambient air pollution impairs the health of almost all urban residents in many cities, indoors air pollution is particularly hazardous for women and children of low-income households who are regularly exposed to higher concentrations of air pollutants from cooking and heating sources in poorly-ventilated housing. Waterborne diseases are found most commonly in low-income neighborhoods as a result of inadequate sanitation, drainage and solid waste collection services. Health risks, especially to the poor, are also posed by pesticides and industrial effluents.
- (b) The productivity of many cities is adversely affected by traffic congestion and water pollution. The loss in productivity includes the total productive time wasted in traffic

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<sup>2</sup> Available statistics on urban population presents that countries of the Asia-Pacific region show significantly different levels of urbanization. However, most definitions of "urban" in the Asia-Pacific countries are based on administrative / political criteria that do not necessarily recognize the functional characteristic of urbanization, and as a consequence, the extent of urbanization is often underestimated.

and the associated increase in the costs of operating and maintaining vehicles. The rising costs of treating polluted water for industrial and domestic purposes are damaging the productivity of urban economies. Fisheries are also being severely harmed by water pollution.

- (c) Uncollected and improperly handled solid waste can have serious health consequences. They block drainage systems and contaminate groundwater at landfill sites. In many cities, particularly those in Pacific island countries, it is difficult to secure land for waste disposal facilities, especially onshore landfill sites. Most cities in the region are also unable to manage the increasing amounts of hazardous wastes generated by rapid industrialization.
- (d) Conversion of agricultural land and forest, as well as reclaiming of wetlands, for urban uses and infrastructure, are associated with widespread removal of vegetation to support urban ecosystem and put additional pressure on nearby areas that may be even more ecologically sensitive. Groundwater overdraft has led to land subsidence and a higher frequency of flooding, particularly in the lowest-lying and poorest areas.
- (e) Urbanization in coastal areas often leads to the destruction of sensitive ecosystems and can also alter the hydrology of coasts and their natural features such as mangrove swamps, reefs and beaches that serve as barriers to erosion and form important habitats for species.

Urbanization does not have only local environmental impacts but also large so-called 'ecological footprints' beyond their immediate vicinity. Intensive and extensive exploitation of natural resources to support urban economy includes excessive extraction of energy resources (including fuelwood), quarrying and excavation of sand, gravel and building materials at large scales, and overextraction of water. These all contribute to degradation of the natural support systems and irreversible loss of critical ecosystem functions, such as the hydrological cycle, carbon cycle and biological diversity, in addition to conflicts with rural uses of such limited resources. Other effects can be felt further afield such as pollution of waterways, long-range air pollution that impact on human health as well as on vegetation and soils at a considerable distance.

### Poverty

The growth of large cities, particularly in developing countries, has been accompanied by an increase in urban poverty which tends to be concentrated in certain social groups and in particular locations. Pollution especially affects the poor live at the urban periphery, where manufacturing and processing plants are built and where environmental protection is frequently weak. Environmental sensitive sites such as steep hillsides, flood plains, dry land or the most polluted sites near solid waste dumps and next to open drains and sewers are often the only places where low-income groups can live without the fear of eviction. The

poorest groups thus suffer the most from the floods, landslides or other disasters that increasingly batter the cities of developing countries.

### Waste Recycling - New Challenges of Sustainability

Waste generation in urban areas continues to increase world-wide in tandem with concentration of populations and increase in living standards, and has reached to unmanageable levels in many localities. High proportion of the waste could be recycled, not simply to reduce the amount of waste to be disposed of. The practice also provides an opportunity to generate income for the urban poor, to prevent environmental damages of waste dumping, and further to demonstrate less material- and energy-intensive consumption patterns. Promotion of sustainable consumption should have the far-reaching benefit of fostering domestic enterprises and pushing the production sector towards sustainable pathways. There is a need to develop an integrated approach where the public, private and community sectors work together to develop local solutions promoting sustainable waste management of material recycling.

## **Causal Factors behind Urbanization**

### General

The major reasons for increasing urban population are rural to urban migration, including international migration to a lesser extent, and the re-classification or expansion of existing city boundaries to include populations that were hitherto classified as being resident outside the city limits. These are estimated to contribute about 60 per cent of the region's urban growth, while natural increase counts for some 40 per cent.<sup>3</sup>

### Rural -Urban Migration

Primary driving forces of rural-urban migration include the opportunities and services offered in urban areas — especially jobs and education, while in some cases, conflict, land degradation and exhaustion of natural resources in rural areas are also important.

The patterns of rural-urban migration may be city-specific, reflecting, among other things, changes in the city's economic base, labour market and age structure. They also reflect social, economic and political changes within the region and nation and are influenced by economic factors in the surrounding and distant rural areas, such as landowning structure, agricultural practices and crop prices, and overall rural productivity. Most evidence suggests that increasing the income and level of education of rural populations accelerates migration and this phenomenon, coupled with the greater access to urban areas, has led to an inevitable increase in rural populations seeking employment opportunities in urban areas.

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<sup>3</sup> See also footnote 2. on page 2

### Links to Globalization

The steady increase in the level of urbanization reflects the fact that the size of the world's economy has grown many times and has also changed from one dominated by relatively closed national economies or trading blocs to one where most countries have more open economies and where production and the services it needs, including financial services, are increasingly integrated internationally. These trends appear to be strengthening, reinforced especially by the freer and faster flows of information and knowledge under the impact of new information technologies. Technology has increased the already dominant economic role and importance of urban areas worldwide, indicating the growing importance of cities in the global economy.

### Mismanagement

It is often pointed out that many urban environmental problems are the result of poor management, poor planning and absence of coherent urban policies rather than of urbanization itself. The problem of urbanization has significantly been exacerbated by inappropriate incentive systems, such as the "growth-first" strategy adopted by the Governments of many countries in the region, especially in developing countries.

In order to attract investment, industrial promotion policies are designed to offer privileges and incentive packages, including low-taxes lax regulations and subsidized infrastructure, with target to urban areas. Industrial growth, combined with inadequate infrastructure, inappropriate pricing of resources and services, and inadequate institutional mechanism to ensure environmental protection, further accelerates environmental degradation in urban areas. The 'land market' factors that accounted for exacerbating urbanization problems include inappropriate regulation, lack of tenure security, inadequate infrastructure capacity inadequate information, inadequate pricing and taxation, and weak institutions and poorly coordinated actors in the land market. All these factors necessitate significant improvements in overall urban governance to effectively reduce and bypass the urbanization problems.

### **Policy Responses and Tools to manage Urbanization**

A variety of options in terms of policy responses and tools to cope effectively with the urbanization transition has been proposed and discussed for several decades. These options may be categorized in the following four strategic steps.

- a) National planning to control urbanization to manageable levels
- b) Regional / Urban planning to guide urbanization to manageable situation
- c) Intra-urban management to cope with urbanization problems
- d) Participation, Partnership and Governance

*a) National planning to control urbanization to manageable levels*

In an attempt to ensure better management of urbanization, Governments have had adopted macroeconomic policies that are designed to mitigate magnitude of urbanization to manageable levels, or to keep people in rural areas. As a primary tool, a National Physical (Spatial) Development Plan could be established to address the mid- and long-term national direction on distribution of population; utilization of land; development of new land, water and energy; provision of infrastructure, housing and transportation that favor decentralized economic development.

Such planning approach, especially when coordinated with the overall economic policy as well as relevant sectoral development programmers covering, in particular, industrial and agricultural productivity, would be effective in establishing an orderly and consistent utilization of land on a national basis and providing the opportunity for urbanization issues to be addressed in the coherent way in the context of overall national development.

*b) Regional and Urban Land Use Planning to Guide Urbanization*

Following the provisions set by the national development plan, land-use planning and management tools at regional (sub-national, provincial) and urban local levels have long been expected to play a crucial role in avoiding and mitigating the adverse impacts of rapid, unplanned urbanization.

Regional planning tools for the purpose include the planned development of intermediate urban centers, promotion of polycentric regional network of urban centres, and economic development of smaller towns and cities in less concentrated areas in rural provinces.

At the city level, local governments have been encouraged to carry out an integrated land-use planning to comprehensively address adverse impacts of urbanization, including environmental problems. Zoning techniques, which may be applied to implement the master plan and to guide urban development to spatially appropriate areas, include designation of sensitive land resources and areas, establishment of buffer zones, management of hazard-prone lands, protection of cultural resources, conservation of open spaces and urban green, management of prime agricultural land, guiding and discouraging of excessive urban sprawl. Regulatory instruments such as land and household registration / information systems, property tax systems, land tenure systems, and building and land development permits are all important basic tools that can be strengthened for effectively implementing spatial planning and zoning techniques.

Compact development techniques such as ‘smart growth’ movement and sustainable city initiatives have been advocated to combat urban sprawl, promoting the build-up within an

already urbanized area, redeveloping on cleaned-up contaminated sites or ‘brownfields’, and cluster development on reduced-size lots.

As a reaction to the shortcomings of traditional planning approaches, and more recently to address the needs of sustainable development, various countries have adopted new processes and approaches to urban planning. **Action planning** is a ‘learning by doing’ approach to resolve urbanization problems in a short term perspective, with minimum data collection and planning procedures. Local community participation in decision-making is deemed a key to success. **Strategic planning** is also a participatory approach to integrated urban development to achieve growth management and remedial actions at both the city-wide and community scales. The output of the process is not just a physical development plan but a set of inter-related strategies for city development covering land, infrastructure, finance and institutions

There are a number of technical tools which are now becoming widely used as part of effective urban planning approaches. Amongst others, **Geographical information systems (GIS)** are gaining increasing importance as a tool for decision-making in planning. The essence of GIS is to link together different data sets and present them clearly and concisely in a variety of ways. GIS can also aid short-staffed local governments in better managing rapid urban growth. **Land market assessments** provides accurate and up-to date information on land prices, supply of serviced land, present and future land projects, housing typologies, and other aspects of the housing and land market, and thus is used to support government planning and decision making, the evaluation of government policies and actions, private sector investment and development decisions and structuring of land based taxation systems. There are also a number of improved zoning techniques, such as mixed zoning, floating zoning, conditional or contract zoning and phased zoning.

Both rational decision-making regarding overall policies and implementing specific programmes to effectively address urbanization requires a sense of comparative risks. Environmental and socio-economic impact assessment and risk ranking are useful planning tools for this purpose. In addition to traditional zoning procedures, new techniques such as strategic environmental assessment are being adopted, as a means of integrating potential environmental considerations at the early stages of strategic policy formulation.

*c) Intra-urban management to cope with urbanization problems*

Despite all the policy responses to better manage the urbanization, as outlined in a) and b) above, the chances to prevent the urbanization transition would still be slim from practical point of view. Then, the challenge to many city managers still remains as to project and build the necessary infrastructure and services (housing, public transport; and sewage, water supply, and waste disposal systems) outpacing the wave of rural-urban migrants suffocate the existing urban agglomerations.

Investment requirements of urban infrastructure in Asia and the Pacific are massive and impose enormous demands on fiscal resources. As a number of financial options has been proposed and experimented in the region, the range of such options is certainly expanding with the region-wide trend of providing local governments with greater discretion in the levying of taxes, fees and service charges, and of increased reliance on the private sector.

Provision of infrastructure should not be seen merely as a reactive response to ongoing urbanization, often a curative measure to deteriorating urban environment. It could rather be used as a guide to future urban build-up in more positive way, to guide it to spatially more appropriate areas. Among other infrastructure sectors, urban transport system could play a crucial role in this context. Technical options include advance planning, stepwise/strategic introduction of mass transit system, and aggressive use of congestion pricing.

Because of the importance of specific local circumstances and political realities, there is no viable approach to solving urban environmental problems that can be applied in every city. A basic step is to develop a local environmental agenda to assess the local situation regarding environmental issues so that this information can be integrated in urban planning. The process involves routinely incorporating environmental information and data, standards and policy targets, techniques and monitoring in strategic urban development plans. Spatial, cross-media, inter-temporal factors must all be taken into consideration.

Successful urban environmental management may include the following sectoral elements; increases in resource efficiency, reductions in waste generation, improving urban infrastructure for water supply, the management and conservation of water resources in urban areas by improved waste water treatment and through legislation, setting up of recycling schemes, development of more effective waste collection systems, strict legislation for the treatment of hazardous waste, waste collection through public-private partnership, adoption of energy technologies by industry and households, and restoration of brownfields.

#### *d) Participation, Partnership and Governance*

Through experience, it has been learned that no amount of finance, technology or expertise can secure environmentally sustainable urban development — or protect the environment — if the fundamentals of governance are not participatory, democratic and pluralistic. Many developing countries have developed extensive regulations on pollution, most of which are not applied effectively because of the lack of proper institutions, legal systems, political will and competent governance. Unfortunately, particularly where economic and social change is rapid, established political and administrative institutions have proved highly resistant to change.

Improving the urban governance, in particular, through increasing transparency and accountability of policy formulation and decision making processes, is a key to success in

implementing any urban management policies and plans. Participation of all stakeholders who are benefiting from relevant decisions and actions should be ensured at all levels of planning activities, in combination with greater access to relevant information and enhancement of public awareness of urbanization issues.

Efforts to improve urban governance essentially involve activities promoting participatory processes; developing effective partnerships with and among all actors of civil society, particularly the private and community sectors; securing greater effective empowerment of local government, including greater autonomy in finance and legislation; and reform of unresponsive organizations and bureaucratic structures.

### **Efforts by Countries of the Asia-Pacific Region**

A number of countries in the region have attempted to develop greater integration in their development and environmental policy making to manage urbanization.

Japan provides rich experiences of successive applications of the National Land Development Plan and the Capital Region Development Improvement Plans as basic planning tools at the national scale, and operations of the Regional Environmental Pollution Control Program (REPCP) at the regional level. Examples of systematic consideration of broader issues of metropolitan scale land management, infrastructure investment, financing mechanisms and governance in an integrated manner, include the Klang Valley Environmental Plan in Malaysia and the Ho Chi Minh City Environmental Planning Project in Viet Nam.

Within improved urban land management systems, various integrated planning and regulatory systems are now linked to institutional, sectoral investment and fiscal policies. Planning and regulatory tools are also being improved, such as the “broad brush”, structure planning approaches used in the JABOTABEK Metropolitan Development Plan in Indonesia and the Metro Manila Capital Investment Folio in the Philippines.

Over the last few decades, many cities in the region have experimented with the development of neighbourhood or community organizations to ensure that equity and social issues are properly addressed in the local governance processes. These organizations are consulted on the planning of new development, implementation of infrastructure improvement and implementation of tariff or tax increases. Furthermore, programmes are developed under which community organizations can be responsible for their own infrastructure development, with some notable successes including the delivery of services in sanitation (Karachi), public health (Calcutta) and environmental protection (Metro Manila). The Kampung Improvement Programme in Surabaya, Indonesia is regarded as one of the most successful initiatives to improve housing and living conditions, achieved with households and community organizations making major contributions both to provision and to maintenance of basic infrastructures.

Mechanisms are employed to mobilize the considerable investment needs of the developing world's cities and towns through increased reliance on the private sector. Several cities in the region are now privatizing or contracting out the delivery of services such as water, power, solid waste collection and transportation, etc. in particular, through arrangement of successful public private partnerships. In Malaysia, Thailand and the Philippines, for example, the Build-Operate-Transfer (BOT) laws have been operationalized to spearhead private sector participation in infrastructure development, whilst reducing the public sector fiscal burden and encouraging the inflow of foreign capital, expertise and technology.

However, experiences illustrated that fundamental weakness is observed in many developing countries in their capacity for implementation and enforcement of policies and measures to manage urbanization. Though decentralization and local autonomy are gaining more momentum, excessive controls are still exercised by higher levels of governments. The process of decentralization is also severely constrained by a lack of institutional capacity among local governments, limited resource mobilization at the local level, and limited access to long-term financing for investment programmes. In many instances, lack of technical expertise and planning / management skills, fragmentation of authority and poor interagency coordination are claimed at the local government level. Especially in the case of land use management measures, corruption or intimate financial linkages of government authorities and land developers, legal or illegal, often renders improbable the effective enforcement.

### **International Cooperation Programmes**

A range of international and regional programmes have been operational with focus on providing support to national efforts. The primary areas of such international support concentrate in provision of common policy frameworks, training and capacity-building opportunities, information and experience exchange, and advisory and technical assistance services.

*ESCAP/ADB's State of the Environment in Asia and the Pacific 2000* lists the following as ongoing efforts:

- 1 ) Regional Action Plan on Urbanization
- 2 ) Asia-Pacific Initiative 2000
- 3 ) Land Management Programme (LMP)
- 4 ) Local Leadership and Management Training Programme
- 5 ) Localizing Agenda 21: Action Planning for Sustainable Urban Development (LA 21)
- 6 ) Best Practices and Local Leadership Programme
- 7 ) Urban Management Programme for Asia and the Pacific (UMPAP)
- 8 ) Urban Management Programme-Asia
- 9 ) CITYNET

- 10) LOGOTRI
- 11) Other programmes including Safer Cities Programme and the Women and Habitat Programme of United Nations Centre for Human Settlement (UNCHS or HABITAT).

More recently, programmes involving city-to-city cooperation are emerging, and promoting exchange of experiences and “lessons learned”. The Kitakyushu Initiative for a Clean Environment, adopted by the Ministerial Conference on Environment and Development in Asia and the Pacific 2000, mandates the achievement of measurable progress in improvement of the urban environmental quality and human health in Asia and the Pacific, mainly through local initiatives aiming at control of air and water pollution and minimization of all kinds of wastes. Its implementation features include the application of quantitative indicators, encouragement of intercity cooperation, and promotion of multistakeholder partnerships. The International Council for Local Environmental Initiatives (ICLEI) works with 286 local governments in 43 countries to improve local energy management and reduce greenhouse gas emissions. UNCHS celebrated the 2002 World Habitat Day with the theme of "City-to-City Cooperation" to encourage more cooperation between and among cities, highlighting the cost-effectiveness of sharing "lesson learned" for improving the management capacity of cities for sustainable urbanization. Initiatives such as the Stockholm Partnership for Sustainable Cities have been developed to introduce sustainability into city planning through partnership between cities and business.

### **Possible Areas of APFED interventions**

In its message to WSSD, APFED committed to take the actions possible within the members’ capacities, to see the realization of its recommendations. Furthermore, APFED committed to launch the following partnership initiatives, which has been included in the Type II outcome of the WSSD. :

- (a) Launching a new initiative to collect and analyze **best policy practices** (BPP) related to the actions recommended above, in close collaboration with the scientific community and other stakeholders. This will be compiled by the end of 2004 for use as a common asset for policy makers in Asia and the Pacific region.
- (b) Developing a **network of researchers and research institutions** (NetRes), in particular to including policy recommendations to put into practice the above recommendations, develop s a part of APFED’s final outcomes.
- (c) Developing an **inventory of capacity building programs** (CBP) in Asia and the Pacific region and disseminate the information to those needing training

In line with the above initiatives, subsequent APFED work on urbanization may also be

structured in these three dimensions of BPS, NetRes, and CBP inventory in the field of urbanization mitigation and responses. However, in order to enhance the work efficiencies and effectiveness, the expert group may see it appropriate to propose the setting of more specific focus, and to advise on currently available resources from accessible sources, as well as methodologies or modality in carrying out the work. Possible options for these elements may be as follows:

- Focus
- Analysis and evaluation of the past and present land use policies and planning practices, in particular, through Strategic Environmental Assessment techniques;
  - Innovative planning tools (such as Geographic information system, land market assessment and new zoning techniques, in contrast with conventional / indigenous planning tools)
  - Sustainable urban consumption model (maximization of material recycling, circular economy)
  - Participation and partnership approach to planning / management / financing of urban environmental infrastructure
  - Emerging environmental threats (early identification and raising preparedness)

Available Resources

- Existing data sets and networks
- inter-programme cooperation
- Research stocks and researchers

Methodology

- IGES as research engine
- Network operator and focal points
- Network of networks
- Follow-up expert meetings may be organized
- Crystallization of expert ideas into APFED conclusion

It is expected that the expert recommendation will be reported as Chairperson's summary at the 3<sup>rd</sup> Substantive Meeting of APFED for further deliberations for future activities of APFED.

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