Chapter 5

Enabling Factors Promoting Local Initiatives for Sustainable Consumption in Asia: Potential roles of local governments

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1. Introduction

This chapter explores the existing and potential roles for local governments to formulate and implement local initiatives which contribute to sustainable consumption (SC).[1] The focus is on the possibilities for local governments to play a facilitation role for other stakeholders in areas close to the daily lives of household consumers in developing and developed countries.

Although there is a large amount of literature on sustainable consumption, much of it focuses on explaining the nature of the problem and why it occurs, using a variety of perspectives including economic, ethical, and normative (Seyfang 2009; Jackson 2006; Princen, Maniates, and Conca 2002). Much of the discussion is also quite theoretical and abstract. Some studies and reports discuss various general policy measures that could be taken, including general guidance for countries on how to design their national plans (see for example: UNEP 2005; UNEP 2008). The discussion tends to focus on policy at the national level or at the level of individual consumers. In contrast, this chapter is directed between these levels by focusing on the role of local governments and examines actual case studies at the local level.

Chapter Highlights

This chapter focuses on the roles local governments can play in formulating and implementing local initiatives which contribute to sustainable consumption. Many case studies are included, with the analysis focusing on the enabling factors for promoting these local initiatives.

- Examples of local initiatives for SC can be found in a variety of countries and sectors in Asia. Common success factors include proactive facilitation of stakeholder engagement by local governments or others; responsiveness to local issues and concerns; support by local government leaders, especially mayors; and external support from national governments, international organisations, or NGOs.
- Mayors and other senior local government leaders should take the initiative to facilitate stakeholder involvement and mobilise resources within and outside of local governments. Even simple encouragement of working level officials or other stakeholders can be helpful.
- Relevance to local issues is especially important for project success. Even local governments themselves may need to pay more attention to this. Stakeholder consultation is very important for gaining their understanding of local relevance, and facilitation, in turn, is important for effective consultation.

This chapter demonstrates that there are already a number of examples of these types of actions in Asia, in a range of sectors in a variety of countries and conditions. It also outlines some of the factors that could facilitate the formulation and implementation of

local government-led sustainability initiatives. Finally, this chapter examines some local initiatives led by non-governmental organisations (NGO) and communities to explore potential lessons for local governments.

Unsustainable consumption problems in Asia are mainly centred on urban areas. Moreover, urbanisation, along with its related problems, is expected to steadily increase. By 2030, 2.7 billion people will live in urban areas in Asia (United Nations 2004). The population of urban areas is expected to increase by 44 million each year over the next 25 years (Asian Development Bank 2008). The growth of cities creates more economic opportunities, but unplanned or poorly planned urban development brings environmental degradation and problems such as a soaring amount of garbage, untreated wastewater, and water scarcity. As rapid economic growth continues, urban residents are expected to intensify the serious environmental pressures through expanded consumption of energy, water and materials if there is no significant change of efficiency which could reduce demand for resources. Current consumption patterns in Asia are clearly not sustainable, and resources will become increasingly scarce (see for example chapter 1, 4-5, 7-8 of this White Paper).

Cities, however, are not only a cause of environmental problems but also a potential solution. Moreover, national governments cannot solve these problems without cooperation from municipal governments and other stakeholders in cities, since national government policies must be implemented at local levels. Local actions to address sustainability problems are needed in both developed and developing countries. Cities in developed countries need demand and efficiency management to make their consumption patterns more sustainable, while cities in developing countries need to follow alternative development pathways that have different consumption patterns. This chapter does not present a comprehensive vision of these alternative pathways, but instead will demonstrate that there are some pioneering cities that are already taking concrete actions that others can learn from to improve the sustainability of their consumption, and it explores some of the enabling factors of these actions.

1.1 Exploring the roles of local governments in Asia-Pacific

Although they have been given relatively less attention in global discussions, local governments can play a significant role to facilitate local actions towards sustainability. In this study, local governments are defined as municipal governments that are usually responsible for urban services such as waste collection and water supply. Intermediate local governments such as provinces are not the focus. Local actions are vital since all individual and organisational consumption occurs in some locality. To be effective, any national or international policy needs to be implemented by local actions. The implementation of new practices for sustainable consumption is not possible without concrete changes in the perceptions and behaviour of local actors, which in turn is difficult if local actors do not fully understand and recognise their value. Local governments can bring together various stakeholders with different resources and skills and complement national government functions. Since they are closer to local stakeholders, local governments can be more responsive to varied local characteristics.

Most studies addressing the formulation and implementation of local initiatives relating to sustainability have mainly focused on examples from outside of Asia (especially Europe) (e.g., literature surveys in Garcia-Sanchez and Prado-Lorenzo 2008 and 2009). Many studies also focus narrowly on specific areas like clean development mechanisms (CDM) (e.g., Nussbaumer 2009), and with a few exceptions, do not compare lessons across cases (ICLEI 2002c). Also, many studies have mainly focused on plans and planning

processes rather than actual projects, especially those related to Local Agenda 21 (LA21), a programme of the International Council for Local Environmental Initiatives (ICLEI), which focuses on helping local governments develop strategic plans addressing local sustainability concerns using a multistakeholder participatory process (Tuts 2002; ICLEI 2002a; ICLEI 2002b; Garcia-Sanchez and Prado-Lorenzo 2008 and 2009; Pattenden nd).[2] Some studies (e.g., Garcia-Sanchez and Prado-Lorenzo 2008 and 2009) use quantitative methodology rather than case studies. Many of these are not necessarily focused specifically on the consumption side of sustainability.

Nevertheless, there are a few case studies and databases that include local government initiatives for sustainability in Asia. One is the IGES RISPO-I study, Research on Innovative and Strategic Policy Options, which developed a Good Practice Inventory that focused on innovative approaches in the field of environment (Asia-Pacific Environmental Innovation Strategy Project 2005).[3] It comprehensively studied innovative approaches and covered awareness, capacity building, planning, management, organisation, partnerships, economic instruments, regulatory instruments, self-regulation, research and development, and technologies. The Asia-Pacific Forum for Environment and Development (APFED) Good Practice Database is another relevant database that collates case studies on various environmental issues in the Asia-Pacific region with analysis of critical instruments similar to the above.[4] The RISPO-I Good Practice Inventory was subsequently integrated into the APFED Good Practice Database. The RISPO-I research also identified a broad and comprehensive set of common success factors among the cases (King and Mori 2007a, 2007b). In contrast, this study is much more narrowly focused on the potential role of local governments, as well as success factors related to local governments, while it also emphasises cases that are more closely related to sustainable consumption. The Kitakyushu Initiative for a Clean Environment also developed a database for successful practices in Asia that covered air quality management, water supply and wastewater management, and solid waste management (Kitakyushu Initiative for a Clean Environment 2008). Similar to RISPO-I but different from this study, the Kitakyushu Initiative study's analysis focused on sector specific and technical issues such as waste collection, recycling measures, landfills, financing and administration in relation to solid waste management. In relation to climate change, local governments' policies and measures have been examined in China and Japan (Qi, Ma, Zhang, and Li 2008; Sugiyama and Takeuchi 2008), however only a few cases of policies and practices in specific locations were covered. These studies mainly focused on the contents of local policies and programmes and their relationships with national policies. Other Asian countries and other sustainability policy areas were not studied.

This chapter demonstrates that there is a range of successful cases in Asia, and identifies possible enabling factors in formulation and implementation of initiatives, focusing on the existing and potential roles of local government including facilitation of local stakeholders. To do this, this chapter discusses several cases of local initiatives in Asia in the fields of energy, food consumption, transport, and waste management, where the roles, choices and behaviour of general citizens are critical.

The remainder of this chapter is structured as follows. The next section will discuss the potential enabling factors including the roles of local governments. Then, the case selection will be introduced and the circumstances of each case will be discussed with reference to the potential enabling factors. The final section discusses the results and implications.

2. Enabling factors in the formulation and implementation of local actions for sustainable consumption in Asia and the roles of local governments

This purpose of this chapter is to examine potential enabling factors that could affect the formulation and implementation of local initiatives towards sustainable consumption.

Four main factors are emphasised. The first is the presence of proactive actions by coordinators and facilitators to consult with and engage local stakeholders, which goes beyond simple participation in implementation. This is very important to develop enough sense of conviction to start and continue new practices and policies. Either local governments or NGOs (or both) could play a coordination role. The second is responsiveness to local issues and concerns. This makes it easier for new initiatives and practices to receive the support of local actors. National initiatives dealing with long term sustainability issues such as climate change and biodiversity often do not prioritise or incorporate local developmental issues well, especially when introduced in a top down manner. Local governments also need to pay attention to this. The third is support by local government leaders. Their important roles and actions include political support for obtaining budget resources, institutional setup, persuading stakeholders, and mobilising external resources. The fourth is gaining external support from national governments, international organisations, NGOs, or other experts, who can provide knowledge or financial support. International intercity environment networks such as the Kitakyushu Initiative or ICLEI can assist in replicating some practices and technologies in other cities and countries. For each of these enabling factors, a corresponding potential role of local government is considered: facilitator, designer, leader, and external networker, respectively.

These factors were observed to be important in a previous study on factors affecting environmental policy processes of Asian local governments that are engaged in international intercity network programmes for the environment (Fujikura et al. 2009). Though many possible factors, both endogenous and exogenous to the local area, could affect the adoption and implementation of policies by local governments (Ito 2002), this chapter focuses on factors that can be managed and utilised by local governments when they design, execute or support new practices and policies for sustainable consumption.

Our previous study (Fujikura et al. 2009) demonstrates the importance of other factors such as pressure from residents and NGOs and network activities by NGOs and industrial groups, but these will not be addressed here because it is possible that local governments could formulate projects and policies on their own without pressure from residents or NGOs. Also, chapter 6 of this White Paper, which focuses on community initiatives and empowering communities to carryout sustainability policies and actions, looks into this topic in detail. This chapter considers that local governments should contribute to coordinating the views of various stakeholders, and therefore, focuses on factors which are relevant for local governments and their relationships with other stakeholders.

In general, the factors addressed in this chapter are broadly consistent with the results of previous studies on success factors of local initiatives including those focusing on examples from outside of Asia (especially Europe) (e.g., Garcia-Sanchez and Prado-Lorenzo 2008 and 2009), specific areas like clean development mechanisms (CDM) (e.g., Nussbaumer 2009), and those related to LA21's plans and planning processes (Tuts 2002; ICLEI 2002a; ICLEI 2002b; Garcia-Sanchez and Prado-Lorenzo 2008 and 2009; Pattenden nd). Many lessons involve factors similar to those discussed here, though others are more technical or specific to individual projects. A few factors are different,

especially when compared with the European Union; for example, one study found that political factors, including the stability of the municipal government, are not very important regarding the development of LA21 plans (Garcia-Sanchez and Prado-Lorenzo 2008). Finally, the factors examined in this chapter are broadly consistent with the actor and process variables observed in the RISPO-I study (King and Mori 2007b, 137-9). However, this chapter focuses more narrowly on the local level, including the facilitation role played by local governments.

The importance of these factors may seem self-evident. However, many local governments are not formulating, facilitating or cooperating with local sustainable consumption initiatives, despite the proactive efforts described here and elsewhere, including the steady progress of LA21. Therefore, there is considerable room for improvement. Many local leaders may still believe that sustainable consumption is not relevant for local concerns in their area, especially in developing countries, and may be suspicious of cooperating with local NGOs or other groups, not imagining the potential for cooperation with international organisations or even their own national government. Therefore, it is hoped that the analysis in this chapter can contribute to changing the mind-set of more hesitant and sceptical local leaders, and that they might find some inspiration in the case studies described here.

3. Cases of local initiatives for sustainable consumption in Asia

This section introduces a number of cases of local actions in four relevant fields of sustainable consumption where there is room to increase citizens' involvement: energy, food, transport, and waste management. These four areas were selected because they illustrate practices that are implemented or facilitated by local governments and include engagement of households, citizens and communities. These areas also range broadly along the production chain, from inputs like energy, to household consumption of food and transport, and finally to waste disposal as the final consumption stage. These areas are also identified in regional meetings hosted by UN agencies and others (e.g., UNEP 2001). Because waste management is one of the more common issues relevant to local residents and is dealt with by local authorities, cases in this area are considered even when reducing consumption is not the main goal. Moreover, waste can be influenced by changing the behaviour of household consumers.

The case discussion highlights the roles of actors who initiated the process of new practice adoption, stakeholders engaged in the process, the process of adoption and implementation of new practices and policies, obstacles the local actors faced and how they were overcome (or not), and the roles played by local governments. Then enabling factors are identified.

Cases with a high degree of engagement of local residents and stakeholders at the time of project implementation were selected from both developing and developed countries to illustrate a range of countries and sectors. These are mainly successful cases, although some also illustrate difficulties that were not solved. Here, cases are considered successful if they completed the implementation of the intended initiative. Although this set of cases is not representative or comprehensive, it does demonstrate that successful cases do exist in a wide range of countries and sectors. The main criterion for selecting these particular cases was sufficient information to assess the potential enabling factors. Only one of these cases is from existing case databases (Asia-Pacific Environmental Innovation Strategy Project 2005; Kitakyushu Initiative for a Clean Environment 2008).

3.1 Energy

Case 1: Integrated industrial development, regulation and education to promote solar power, Rizhao, China

Case 1 illustrates an initiative coordinated by a local government and supported by local government leaders, which brought tangible benefits to local stakeholders (C40 Cities nd).

Rizhao is a coastal city in Shandong province, China with a per capita income lower than most other cities in the region. Faced with expected energy and environmental constraints under rapid economic growth, the mayor decided to implement strong policies to promote renewable energy, focusing on solar power, including provision of financial support for research and development by local solar panel industries. The Shandong provincial government also subsidised research and development for the solar water heater industry.

Both regulatory and public education policies resulted in widespread adoption of solar heaters. The city government required all new buildings to install solar panels, and it monitored construction activity to ensure implementation. It also raised public awareness through open seminars and television advertisements. The first solar panels were installed in government buildings and the residences of city government senior officials. Some government agencies and companies provided free installation of solar panels for employees (not including repairs and replacement).

The mayor and local government officials saw a positive relationship between improved environmental quality and the long run economic and social development of the city. It is estimated that the solar water heaters reduce carbon dioxide emissions by at least 52,860 tonnes a year. The State Environmental Protection Administration (currently Ministry of Environmental Protection) designated Rizhao as an Environmental Protection Model City (C40 Cities nd).

Rizhao shows how industrial development and sustainable energy consumption can be aligned. The initiative was led by local government leaders and coordinated by the local government by combining regulatory policy, financial incentives and public education. The local government proactively coordinated with both industries and households. The initiative was also supported by provincial government policy.

Case 2: Relocating people to energy efficient houses to protect an ecological zone, Puerto Princesa, the Philippines

Case 2 is about an initiative coordinated by the local government with support from the mayor and an external organisation, which addressed local livelihood concerns (Aquitania 2008).

To protect the ecological systems in Puerto Princesa's bay area, a mass housing project was developed to relocate around 800 households whose increasing population had been threatening the coastal reserves. The mayor directed the city engineer's office to design eco-efficient homes for the relocated families. The house designs were revised several times. Also, the secretariat of ICLEI Southeast Asia, which promoted the local government's climate protection campaign, tried to help the city to link the relocation project with their climate protection efforts. By using compact fluorescent lamps (CFL) instead of incandescent bulbs, the households could cut their energy bills by around 60%. In addition, energy demand would decrease by 30-40% due to the eco-design,

including natural illumination and ventilation, the cooling effect of the roofing material, and tree planting by each household. The estimated annual energy savings from the project was about 120,000 kWh, potentially saving about $35,000 per year. A disposal system for non-recyclable and non-biodegradable waste, and backyard composting to reduce waste, were also planned.

Families engaged in fishing initially opposed being relocated since it would involve additional transportation expenses to reach the coastal area. However, after a series of consultations and dialogues, which helped the residents to understand the importance of ecological conservation and prompted them to reconsider their means of livelihood, they agreed to relocate. The personal presence of the mayor in these dialogues facilitated the process (Aquitania 2008).

This case illustrates the relevance of economic benefits of lower energy bills for the residents who accepted relocation for ecosystem conservation. The local government's extensive stakeholder consultations, in particular the mayor's direct engagement, were the key to obtaining the residents' eventual understanding and co-operation. External assistance from ICLEI helped to incorporate the co-benefits of climate change mitigation into this project.

Case 3: Use of biofuel for public vehicles, Chiang Mai, Thailand

Case 3 describes an initiative coordinated by the local government, with the support of an external organisation, to produce biofuel from waste to address a local concern about air pollution from public utility vehicles (Siam CIE International Co., Ltd. 2008). Although the project succeeded in producing biofuel from waste, it was used in vehicles other than the ones originally intended. However, the project still produced sustainability benefits even though the original objective was not completely met.

Chiang Mai is the largest city in northern Thailand and the capital of Chiang Mai Province, situated in a valley that traps air pollutants. To reduce air pollution, the Chiang Mai city government decided to produce and use biodiesel from waste cooking oil as an alternative fuel for *songteaws*, the main public utility vehicles, as part of its master plan (2000-2010) for improving air quality. A demonstration project for 1,000 *songteaws*, with a total budget of THB 9.8 million (about $300,000), was launched in 2004 by the Ministry of Energy as part of its biodiesel programme, and the Pollution Control Department (PCD) conducted cost-effectiveness and environmental impact assessment studies. The demonstration project aimed to use waste cooking oil to produce biodiesel, construct community-level small-scale biofuel plants, and promote the use of biofuel to reduce environmental and health impacts caused by air pollutant emissions. Several local organisations such as Chiang Mai University were involved in the design, construction, and testing of biodiesel equipment and conducted community training.

The original project aimed to use the biodiesel for the *songteaws*. However, instead, it is being produced by private entrepreneurs and used in the villages to fuel pickup trucks and agricultural machinery. *Songteaw* drivers did not trust biodiesel from waste cooking oil, preferring to buy a 5% biodiesel blend (B5) from service stations. Still, sustainability benefits were realised since biofuel from waste cooking oil is still being produced and used, even if not by the originally intended consumer. Now, Chiang Mai city plans to produce first generation biodiesel for its own vehicles from energy crops such as palm oil planted on vacant lots (Siam CIE International Co., Ltd. 2008).

In this case, the biodiesel project was a response to a local air pollution problem as well as economic incentives from high oil prices, and the local government devoted significant effort to it. The failure to utilise biofuel as originally intended suggests insufficient coordination with stakeholders, although ultimately the fuel was used by other groups, and therefore, sustainability objectives were still achieved. The national government's renewable energy programme contributed to this project.

Case 4: Generation of electricity and fertiliser from organic waste in household garbage, Rayong, Thailand

Case 4 illustrates an initiative where the local government effectively coordinated local stakeholders to solve a pressing waste disposal problem, with commitment from the mayor and external support (UNESCAP 2003; Siam CIE International Co., Ltd. 2008).

Rayong City, the capital of Rayong Province, is located about 180 km east of Bangkok, with a population of 59,000. The city faced difficulties in handling increasing amounts of municipal solid waste (MSW) resulting from rapid economic development and a growing population. The old landfill was full, and it was difficult to find a replacement site. Rayong also joined the ICLEI Cities for Climate Protection (CCP) programme with strong support of the incumbent and former mayors, and committed to reduce CO_2 emissions by 15% from the household sector.

For these reasons, the city government adopted an integrated plan for a community-based waste management scheme including recycling, production of organic fertiliser, and production of biogas to generate electricity. The waste-to-fertiliser and energy project aimed to process 60-70 tonnes of MSW per day. The cogeneration capacity was designed at 625 kW and was expected to produce 5,100 MWh of electricity annually. The plant to produce organic fertiliser had an expected economic life of 20 years. In 2003, Rayong generated around 27,000 tonnes of MSW annually, about half of which was estimated to be organic. The biogas project, initiated by the former mayor, was preceded by an intensive campaign to encourage separation of waste at source and recycling. For example, the city provided 12 and 100-liter plastic bins to households and participating businesses to segregate organic wastes. The contents of these bins were sent to the biogas facility.

The mayor of Rayong stressed the importance of community participation in order to reduce costs. Former mayors were also supportive. The city government consulted with city residents regularly, kept them informed, and organised ad-hoc teams to build and strengthen community networks to preserve environmental quality. These groups initiated many activities to persuade people to participate in separating and collecting wastes, including establishing waste banks where recycled waste could be traded for eggs, and a project involving hydro-microorganism fermenting activity which produced odourless waste that can be used as liquid fertiliser or deodorizer for restrooms, drainage ditches, or refuse dumps (UNESCAP 2003).

The project was undertaken in the context of the national strategy on community-based management of natural resources and environment problems that had been established after the Ninth National Economic and Social Development Plan (NESDP 2002-2006).

National and international experts assisted Rayong in the project's development and implementation. Department of Energy Efficiency experts assisted in the project's technical design. Experts from the European Community-ASEAN Cogen Programme also provided technical expertise in the implementation of the project as a full-scale cogeneration project, as well as financial assistance (Siam CIE International Co., Ltd. 2008).

In the Rayong case, the landfill space shortage was an important local concern. Support of the current and former mayors was important for initiating the project, while local government officials effectively engaged local stakeholders and coordinated and facilitated community-based waste segregation and electricity generation. Financial and technical support from national and international organisations was also important.

Case 5: Use of biogas from treated wastewater, Denpasar, Indonesia

Case 5 illustrates an initiative responding to local problems and coordinated by domestic and international non-governmental organisations (PUSTRAL 2008; ICLEI SEA 2004).

This project using biogas from treated wastewater in Denpasar was developed in response to complaints of nearby residents about the wastewater from small- and medium-sized soybean processing companies. The project started in 2003 when companies received technical cooperation support from German and local NGOs. Small-scale biogas processing facilities were installed with the residents' participation, which involved treating wastewater from businesses as well as domestic wastewater from households. Support was provided for the formation of community hygienic groups in 2004 in order to treat domestic wastewater based on an agreement with the Denpasar City Environment Bureau. Six to eight tonnes of wastewater are treated per day at one biogas processing facility, and the gas produced is used for cooking and lighting. According to a report by ICLEI, it is estimated that 149 tonnes per year of greenhouse gas emissions have been reduced at two processing facilities. In addition, it was calculated that the biochemical oxygen demand (BOD) could be reduced by 90% by purifying wastewater, in addition to a savings of IDR 23 million (about $2,300) per year compared to using kerosene and liquefied petroleum gas (LPG). By 2007, 16 biogas-processing facilities were constructed. Polluting enterprises bore 5% of the installation costs of these facilities, and the German NGO covered the remaining costs. However, it has been difficult to secure funds for further expansion of the project (PUSTRAL 2008; ICLEI SEA 2004).

This Indonesian case directly responded to local concerns and complaints, with cooperation, coordination, and benefits for many stakeholders. NGOs coordinated and organised community groups, while the local government extended the hygiene programme, and initiated formal programmes to support community activities. This division of labour is similar to that of Surabaya, Indonesia, as described in case 12, where a foreign NGO provided substantial financial and technical assistance.

3.2 Transport

Case 6: NGO-led coordination for pedestrianisation, Yogyakarta, Indonesia

In Case 6, an NGO coordinated stakeholders to solve a local issue but still encountered difficulties (ITDP 2008).

In a bid to transform a conventional city centre, the local government in Yogyakarta, Indonesia, wanted to improve pedestrian accessibility in order to bring back shoppers and tourists by allowing them to avoid the frequent traffic congestion in that area. Traffic was rerouted along one of the most important commercial streets and tourist destinations, cutting traffic volumes by about 30% in 2005. Also, several elevated pedestrian crossings were constructed. The Institute for Transportation and Development Policy (ITDP) dispatched an urban designer to meet with local authorities. He introduced the case of Copenhagen, Denmark where large-scale pedestrianisation was successfully implemented in the city centre.

Further pedestrian improvements were blocked by at least 13 groups from all strata of society who were profiting from using the public space along the road, including six vendor associations controlling specific areas, several *becak* (pedi-cab) unions, several organised societies of street children who earn petty cash by helping the vendors, and one or two legal chambers of commerce. The rest were essentially protection rackets and criminal gangs, mostly controlling parking, with strong connections to government officials (ITDP 2008). Instran, a local NGO, organised a dialogue with stakeholders along the street to try to develop a plan that incorporated their concerns.

This case is not necessarily a successful one, but it still provides some lessons. It shows the difficulties and importance of engagement of diverse stakeholders related to the new pedestrian improvement project, as well as the coordination efforts by local and foreign NGOs. Pedestrianisation is intended to be people-friendly, but the concept of "people" should be broad enough to accommodate all stakeholders (Nitisudarmo 2009). Local governments should take this into account and ensure adequate coordinating and facilitation when promoting local initiatives.

Case 7: Limits on the use of motorised three-wheelers in the city centre, Butuan, the Philippines

Case 7 illustrates an initiative coordinated by the local government, with support of an external organisation, which was relevant to a local concern (Aquitania 2008).

The city of Butuan is located in the northwestern part of the Caraga Region, the Philippines, with a population of around 270,000. In response to major environmental problems stemming from pollution emitted from motor vehicles, in 1997, the city government passed an ordinance prescribing guidelines for the prevention, control and abatement of air pollution from vehicles. In addition, the city government passed another ordinance to reduce the number of motorised tricycles operating within Butuan from 3,000 to 2,000.

Through the assistance of ICLEI under the CCP campaign, the Butuan city government developed its GHG emissions inventory as part of the city's decision to integrate local environmental concerns with the global climate change issue. This revealed the transport sector to be the biggest source of the city's GHG emissions, followed by the residential and industrial sectors. Butuan therefore concentrated its reduction efforts on the transport sector, which also has a co-benefit of addressing the air pollution problem (Aquitania 2008).

In this case of Butuan, the ability to address local concerns about air pollution was an important factor motivating the local government to introduce a climate change mitigation policy which would otherwise not be a priority. ICLEI played an important role in successfully convincing the local government that climate countermeasures could effectively address local concerns. ICLEI also provided some support to the project by assigning a climate coordinator and climate team. The local government played an important coordination role, including development and implementation of two ordinances.

3.3 Local food production and consumption

Case 8: Local production of organic rice and town revitalisation, Ikeda, Japan

Case 8 introduces a practice that was coordinated by the local government, with support of a local government leader, and which addressed local concerns for revitalisation and sustainability (*Kankyo shuto kontesuto zenkoku nettowaku* and *Hai raifu kenkyujo* 2009).

The town of Ikeda in Japan's Fukui prefecture is located in the central part Japan's main island, with a population of around 3,500. Mountainous forests and rice fields cover more than 90% of the town area. Concerned about the decreasing number of farmers in the town, whose population had declined 18.7% over a decade by 2005 (*Kankyo shuto kontesuto zenkoku nettowaku* and *Hai raifu kenkyujo* 2009), the mayor developed the idea of establishing a store, called *Koppoi-ya*, meaning "thankful" in the local dialect, to sell organic rice and other agricultural products produced by Ikeda's farmers at a shopping centre in Fukui, the capital city of Fukui prefecture with a population of 270,000. The store is also managed by people from Ikeda. Ikeda has its own certification mechanism for organic foods, in particular for products consumed by farmers themselves; today, around 160 farmers are participating. The mayor decided to focus on Fukui city, which is closer to Ikeda, rather than larger markets such as Tokyo and Osaka. In 2007, the annual sales through this store exceeded 20% of Ikeda's total agricultural sales.

Other sustainable agricultural production methods have also been introduced in Ikeda. The town developed a centre to produce fertilisers from organic waste generated by town residents by mixing dung and rice husks. Collection of household organic waste is implemented by local non-profit organisation volunteers, of which about one third are town government staff. The fertiliser produced at the centre underpins Ikeda's agriculture.

One of the success factors was the mayor's effort to develop and deepen the trust between local government staff and local residents. The mayor identifies agriculture as "a part of life, bond among people, art for living, and the cornerstone of local lives." Before becoming mayor, he started cultivation with friends while working as an agricultural consultant. He also began a green tourism package that invited people to come and experience the agricultural way of life. His ideas and experiments also included a contract-based cultivation company and development of a facility where urban residents can stay and experience agriculture in Ikeda. One of the most successful projects was the store to sell locally certified vegetables, discussed above.

In this case, revitalisation of the town and improvement of the quality of life for residents were the primary objectives of the new initiatives, which were also aligned with sustainability issues through reduced chemical use and increasing usage of organic waste. Commitment and support by the mayor, who actively coordinated between the town and external stakeholders, was clear. Local government staff also facilitated citizens' participation.

Case 9: Urban allotment gardens by local governments, Cagayan de Oro, the Philippines

Case 9 illustrates a local government-coordinated initiative responding to a local issue with support of an external organisation (ICLEI 2008; Holmer and Drescher 2005).

In Cagayan de Oro, located in the southern Philippines, a project to establish four urban allotment gardens, aimed at increasing the well-being and food security of the urban poor, was implemented with financial support from EuropeAid's AsiaUrbs Programme.

Allotment gardens are small land parcels of about 200 to 400 square meters that are assigned to individuals, families or associations. They help secure food, improve livelihoods of urban residents and promote sustainability. The local government makes an allotment garden legally available to an association under the condition that they be used exclusively for growing vegetables, fruit and cut flowers.

The local government fully supported the project by passing a city ordinance to promote allotment gardening by providing tax incentives for landowners who make land available for urban agriculture, and requiring space for allotment gardening in residential areas.

The city government selected four *barangays* (the smallest local government unit in the Philippines) as pilot areas based on its experience from a previous waste segregation project. The pilot allotment gardeners are from two main groups: (i) people who are already engaged in urban agriculture but have insufficient land, and (ii) those who need alternative income sources but have no access to land.

Survey results show that a quarter of the production of allotment gardens is consumed by the gardeners themselves, 7% is given to their relatives and friends, and around 70% is sold in the neighbourhood.

Implementation has not necessarily been easy. The gardeners needed to settle various issues, such as which technologies to use, financial management of the project, and roles and responsibilities of gardeners (ICLEI 2008; Holmer and Drescher 2005).

In this urban gardening project in the Philippines, the initiative was relevant for the citizens that were interested in urban agriculture and yet had no access to land. The local government facilitated the diffusion of the new practices through a local ordinance, which shows a high level of commitment.

3.4 Waste management

Case 10: NGO-led community waste management and composting, Dhaka, Bangladesh

Case 10 is an NGO-coordinated initiative that addressed local problems and was supported by external organisations, from which the local government learned the role of coordination from an NGO (C40 Cities nd; Enayetullah 2008). It also involved local stakeholders and citizens.

In the early 1990s, Dhaka, Bangladesh's capital, had no landfill or incineration facilities, and half of the waste generated—1,200 tonnes a day—was unmanaged. This poor situation caused wastewater problems and spread disease. To address this problem, two local individuals created an NGO called Waste Concern in 1995, which started a pilot community-based composting plant with land donated by a local club. The project organised several small enterprises for composting in various locations in the city. The enterprises were to be responsible for door-to-door waste collection, waste separation, composting of organic waste, and sales of compost and recyclable materials. Once the project was successful, the Ministry of Environment and Forests replicated the project in five additional places under the auspices of the United Nations Development Programme (UNDP). Waste Concern asked for the support of governmental agencies in terms of land, water and electricity for composting facilities.

One of the biggest challenges was land availability since land prices in Dhaka were soaring and the local government refused to provide city-owned land. The local government agreed to provide land for a composting facility only after demonstration of the project's effectiveness and the establishment of a good relationship with the local government.

This community waste management project created around 400 jobs to operate compost machines and collect waste door-to-door in slums. Job creation helped to positively

engage community stakeholders. The project is also estimated to have contributed to the reduction of 18,000 tonnes of CO_2 equivalent emissions, while the organic fertiliser produced by the project is sold to farmers. Dhaka earns money from municipal waste by selling carbon credits and fertiliser (C40 Cities nd; Enayetullah 2008).

An NGO played a key role coordinating between the local government and the community. The local government was unenthusiastic at the beginning but eventually supported the initiative by providing land. The initiative was quite relevant to local concerns since it provided waste management services to previously unserved areas, and created jobs. The NGO also organised a door-to-door waste collection system and community-based composting plant. External support from the national government and international organisations was obtained to replicate the practice.

Case 11: Community waste composting and separation of valuable materials, Naga, the Philippines

Case 11 illustrates a local government-coordinated initiative relevant to local issues and supported by local government leaders, in which local government provided enabling regulations (Aquitania 2008).

Naga City is a regional centre for the Bicol Region of the Philippines with a population of 137,810. It is also well known in the Philippines for experiments to improve city governance. The city generates 62 tonnes of garbage per day, half organic and half non-organic. The city government aimed to integrate this local waste management issue with global climate change mitigation. As such, in 1998, the city participated in the ICLEI Southeast Asia's CCP campaign. The city committed to undertake the five milestones of the campaign and implement the waste recycling project as a concrete action.

The project focused on developing materials recovery facilities (MRF), which aim to reduce, reuse and recycle waste, by composting biodegradable wastes and separating valuables. The MRFs were pilot tested in nine out of the city's 27 districts (*barangays*). Only two are still in operation; the other seven become inactive due to changes in district leaders and their agendas. In the two successful cases, support of local leaders, good management by the *barangay* office, and monitoring support by the local NGO were important.

Another enabling condition was the national Local Government Code which gives authority to local governments to establish their own solid waste disposal system and facilities related to general hygiene and sanitation. The city enacted an ordinance in 1995, establishing the Ecological Waste Management Program for Naga even prior to the passage of the Ecological Solid Waste Management Act of the Philippines. The ecological centre of Naga was producing organic fertiliser from biodegradable waste in 1996.

This case simultaneously improved livelihoods and reduced health hazards. Community waste management in Naga has improved the incomes of waste collectors since they have been appointed by the city and included in the policies.

Another important factor was the existence of appropriate staff in charge of a particular area. In Naga, the chairman of the city environmental committee became heavily involved in the project and helped with instructions and political recommendations. This facilitated the implementation of the CCP programme (Aquitania 2008).

This case illustrates the importance of local relevance, support of local politicians, and coordination efforts. The local government played an effective role during the formulation and institutionalisation stages. Difficulties in maintaining the initiative show that the existence of coordinators and facilitators at each operational unit is important to keep attention focused on societal benefits.

Case 12: Reducing waste through composting, Surabaya, Indonesia

Case 12 demonstrates facilitation by the local government, coordination by local NGOs, relevance to local concerns and successful support by an external organisation (Maeda 2009).

Surabaya City in Indonesia, with a population of three million, has significantly reduced its waste generation from 1,500 tonnes per day before 2005 to 1,150 tonnes in 2008. The city has intensively promoted composting practices by consolidating composting centres and distributing thousands of compost baskets to residents, and organised a community cleanup campaign with local NGOs, private companies and the media.

Composting was introduced and diffused in Surabaya in three main stages. First, a solid waste management model was developed in one community through intercity technical cooperation since 2004 between the Kitakyushu International Techno-cooperative Association (KITA) from Kitakyushu City, Japan, and Pusdakota, a local NGO. Later, an efficient composting method appropriate to local conditions was developed and successfully adopted. A modified method for households was also widely used. New composting centres were established, and thousands of compost baskets were distributed to the residents for free, to scale up this practice. The city government outsourced distribution to a women's group and other NGOs because of their grassroots networks. These NGOs organised a network of environmental community leaders to teach citizens how to compost and explain the environmental and health implications. Now there are about 28,000 community leaders in the city.

Surabaya, in collaboration with NGOs, private companies, and the media, has also organised a community cleanup campaign—the Green and Clean Campaign—since 2005. By 2008, around 20% of the city's districts were participating. Wide media coverage in local newspapers and TV programmes as well as at city government events helped attract attention.

Since distributing compost baskets and operating a composting centre are financially feasible and residents can earn income by household composting, the composting practice has spread from one community to many other parts of the city with active involvement and coordination among stakeholders. The city and the women's group in particular played a significant role in coordinating various stakeholders. Through other initiatives and programmes, similar practices have been adopted in many other cities in Indonesia and elsewhere, which have succeeded in reducing waste (Maeda 2009).

In this successful case, both the local government and a local NGO played important roles in coordinating and facilitating various stakeholders, although the initial idea was developed through collaboration between a local NGO and an international technical cooperation provider. The local government provided the financial, institutional and physical assistance to facilitate and empower the activities of local NGOs, which can mobilise residents through their grassroots network. The collaboration and division of responsibility between the local government and NGOs were important for successful coordination. The new practice effectively met the needs of communities to clean the environment and also helped citizens to earn additional income.

Case 13: Using organic waste from the public market to produce fertiliser and detergent, Tungsong, Thailand

Case 13 describes an initiative coordinated by the local government and supported by the local government leader, which addressed a local issue (Siam CIE International Co., Ltd. 2008).

Tungsong is a town located in Nakhon Si Thammarat province in southern Thailand. From its wastewater management facility, Tungsong has produced organic fertiliser (12,000 kilograms) from household sewage and livestock manure and organic fertiliser, and liquid detergent (36,000 litres) from market waste since 2001. The organic fertiliser production is estimated to generate an annual income of $1,200 for the town.

As a part of participation in the ICLEI CCP, the Tungsong municipal government extended the solid waste management programme producing liquid detergents to cover the entire municipality. The Tungsong sanitary district office organised community leaders to produce and sell the product from organic wastes. Tungsong also operates a waste-recycling bank.

Coordination by local government staff is conspicuous. The chief librarian of Tungsong's Public Library is the coordinator of local environmental initiatives, including the CCP. The library is also responsible for organising all information, education and communication campaigns, and networks with schools and students. The sanitary district office is responsible for implementing the programme. The director of the office has been responsible for organising and maintaining the informal association of community leaders, most of them women, who produce and sell the liquid detergents from organic wastes. The mayor generally supported the local environment protection programmes, which ensured that a sufficient number of officials were assigned to the programme.

Tungsong also received assistance from the Thailand Environment Institute (TEI) in designing the climate action plan, although Tungsong was financially sufficient in implementing its local environmental initiatives (Siam CIE International Co., Ltd. 2008).

In this case, strong support from the mayor, effective and capable coordination by local government staff, and responsive community engagement were observed. Income generation from solid waste management was very relevant to the local community, which aided in securing the support of the local government to effectively mobilise and coordinate schools, networks of community leaders, and women's groups. Thus, the local government played an important facilitating role. Finally, support of external experts was important for climate action planning but not for actual solid waste management and waste recovery.

Case 14: Zero waste approach for resources management, Kamikatsu, Japan: Tackling the root problems of waste management through sustainable lifestyles

In Case 14, a city aimed to avoid future reliance on landfill and incineration. Facilitated by the local government, supported by the mayor, and coordinated by a local NGO, the project effectively addressed local problems (Kasamatsu and Sato 2008).

Kamikatsu, located on Shikoku island in Japan, is a small mountainous town with a population of about 2,000. More than half of the residents are over 65 years old, yet the town has an ambitious goal to realise a sustainable community by the end of the twenty-first century. Faced with financial difficulties to secure incinerators and safe landfill sites,

Kamikatsu changed its way of thinking about waste. The town now separates household waste at source into as many as 34 categories, more than anywhere else in Japan. One hundred percent of organic waste is made into other materials, and 70% of other wastes are reused or recycled. Kamikatsu was the first local government in Japan to declare a “zero waste” policy, stating in 2003 that it would reduce the amount of landfilled or incinerated waste to zero by 2020.

The Kamikatsu government does not have waste collection vehicles. A small incinerator closed after three years of operation. There are no waste collection sites, final landfill sites, or staff in charge of waste treatment. The only facility relevant to waste management is a garbage station where town residents bring their waste for separation.

Before 1993, Kamikatsu, like many other towns, burned its waste in an open area without treatment, due to the lack of financial resources for an incinerator or final landfill site. Although the national law required local governments to use incineration, the town conducted a feasibility study on recycling since the town did not intend to invest in incineration or a landfill site.

After the feasibility study, the town government initiated an organic waste composting programme by subsidising the purchase of composting equipment by each household by nearly 90%. The town government also supported the introduction of commercial-grade composting equipment to the elderly care centre, food supply centre, restaurants and hotels. Now, 98% of households practice composting, and the rest use organic waste directly for their fields and gardens.

The number of waste separation categories was steadily increased from 19 in 1997 to 25 in 1998, after extensive consultation between the town government and local residents, and 35 in 2001 after two small incinerators were closed because one no longer met national environmental standards. This reduced the amount of waste for incineration from 140 to 48 tonnes per year. The number of recycling categories is significantly greater than required by national law.

In 1998, the town established a garbage collection centre where residents bring their waste for separation, instead of having it collected by the town government. Volunteers help people who need assistance in transporting their waste to the centre.

Today, Kamikatsu generates 436 grams of waste per resident per day, which is around 40% of the national average (Kasamatsu and Sato 2008). The cost of waste treatment by local governments per resident is around 60% of the national average.

A local NGO called Zero Waste Academy operates the garbage collection centre and coordinates volunteers as well as residents’ engagement with zero waste actions (Kasamatsu and Sato 2008).

In this Japanese case, the initiative began as a reaction to open dumping and lack of financing for an incinerator or sanitary landfill. The waste management problem was very relevant to the town. Strong leadership by the mayor and coordination roles by local government staff, as well as an NGO, to persuade and mobilise town residents were observed. This case is a demonstration of effective collaboration between the local government and a local NGO where the process was facilitated by the local government. This case shares some similarities with the case of waste composting in Surabaya, Indonesia, and demonstrates the relevance of such programmes in both developed and developing countries.

4. Conclusion: Implications for local governments

This section concludes the chapter and discusses implications for local governments working on sustainability issues. Table 5.1 indicates which of the potential enabling factors were present in each of the 14 cases.

Table 5.1 Selected enabling factors for local initiatives

Case study	Selected enabling factors				
	Coordinating role		Relevance to local issues	Support by local government leaders	External support
	Local government	NGO			
Case 1: Energy (China)	x		x	x	x
Case 2: Energy (Philippines)	x		x	x	x
Case 3: Energy (Thailand)	(x)		x		x
Case 4: Energy (Thailand)	x		x	x	x
Case 5: Energy (Indonesia)		x	x		x
Case 6: Transport (Indonesia)		(x)	x		x
Case 7: Transport (Philippines)	x		x		x
Case 8: Food (Japan)	x		x	x	
Case 9: Food (Philippines)	x		x		x
Case 10: Waste (Bangladesh)		x	x		x
Case 11: Waste (Philippines)	x		x	x	
Case 12: Waste (Indonesia)	x	x	x		x
Case 13: Waste (Thailand)	x		x	x	
Case 14: Waste (Japan)	x	x	x	x	

Note: In Cases 3 and 6, the (x) in parentheses under the coordinating role indicates that inadequate coordination hindered the progress of the respective initiatives.

Source: Authors

All cases indicated the importance of coordination and facilitation among local stakeholders for both formulation and implementation of new local initiatives. Moreover, this is true in developing as well as developed countries, for example in the cases of waste management and waste-to-energy in Thailand and in the case of waste management and recycling in Kamikatsu, Japan. The role of local governments was particularly important in the cases of waste management in Indonesia, Thailand and Japan, local food production

in Japan and the Philippines, transport in the Philippines, renewable energy utilisation in China and Thailand and energy efficiency in the Philippines. NGO coordination and facilitation roles are also observed in the cases of waste management in Bangladesh and Indonesia, food production in Japan, and transport in Indonesia.

The cases of waste management in the Philippines, pedestrianisation in Indonesia, and biofuel utilisation for public transport in Thailand also demonstrated that the lack of sufficient coordination and communication among stakeholders could lead to the delay or failure of new initiatives. Moreover, the case of waste management in Bangladesh illustrates the possibility of a local government being a potential obstacle to local initiatives rather than a supporter, where they hesitated to provide land for a material recycling facility.

An important implication is the desirability for local governments, especially in developing countries, to play facilitative and enabling roles, so that other appropriate stakeholders, such as NGOs, can do the actual implementation – essentially leveraging each stakeholder group's expertise and capacity. Another important implication is the importance of changing the mindset of local officials, so that even if they cannot initiate or support new initiatives, at least they could refrain from obstructing appropriate initiatives led by other local stakeholders.

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The relevance of new initiatives to local issues was important in all cases. The implication is that when a local government or NGO tries to begin an initiative to tackle sustainable consumption issues, it is vital for it to consider the relevance to local issues so that the initiative not only solves sustainability issues but also deals with local economic or environmental problems. The initiative should bring about tangible economic benefits to local stakeholders engaged in the initiative—as opposed to implementing the project simply for the sake of sustainability. For example, waste segregation and composting in Bangladesh created new employment and income opportunities in addition to providing cleaning services in a slum area. The case of local food production and consumption in Japan helped revitalise a small town in addition to enhancing local material circulation and reducing food mileage. Of course, linkage to local issues may be easier said than done. Better prior stakeholder consultation may help potential projects to be more effectively linked to local issues and concerns.

Support of local government leaders is found to be important in half of the cases, including both developing and developed countries. In particular several cases demonstrated the importance of the commitment and actions by mayors who initiated the projects and followed up on their implementation, including the cases of waste management in Thailand and Japan, local food production and consumption in Japan and biomass utilisation in Thailand. Since there are other successful cases where support of local government leaders was not present, it cannot be concluded that their support is essential for the success of local initiatives for sustainable consumption. Yet the case studies showed that in cases where the projects enjoyed support from senior local government leaders, this support eased their implementation, especially for mobilising resources, as exemplified in the cases of Tungsong, Thailand and Puerto Princesa, the Philippines.

Lastly, around two-thirds of the cases indicate the importance of external contributions by national governments and international institutions and organisations to local initiatives in the context of developing countries. International institutions and organisations include international NGOs based in developed countries, international developmental organisations and the secretariats of international intercity network programmes. They provided either technical support for planning, inventory development and specific technology, or financial support to construct facilities or procure equipment. When the financial assistance is for projects which generate financial returns, such as power generation, securing additional funds for further extension is probable. However it is difficult to further develop or replicate projects which rely on contributions from external organisations as is discussed in the case of waste management in Indonesia.

Nevertheless, the results suggest that the support of the local government leaders and external assistance, although helpful, is not always necessary to initiate and implement local initiatives for sustainability. Out of the 12 cases in developing countries, two cases from China and Thailand show no reliance on international support. Therefore, this should encourage local actors working on sustainability issues not to simply wait for leaders or external supporters as a precondition of their efforts. Since too much reliance on external support may lead to non-sustainability of the initiatives, project promoters and donors should consider how to ensure the project's long term sustainability.

Another finding is that these enabling factors, which focus on the process of formulating and implementing local initiatives, are broadly similar regardless of the level of economic development, social diversity, or even the nature of relations between central and local governments. On one hand, the demonstration of the importance of factors such as communication, leadership and coordination among local stakeholders may not seem very surprising. On the other hand, this finding is significant in that it demonstrates several broad commonalities among a group of Asian countries with a wide range of national circumstances and conditions and across a range of sectors. Moreover, there may still be the perception in some quarters that there are few examples of "good practices" in developing countries in Asia, and this study confirms research by other recent IGES studies (RISPO-I, Kitakyushu Initiative, APFED) that quite a few cases can be identified. Therefore, the results of this study, combined with these other IGES studies may justify a cautious optimism, demonstrating that local initiatives to promote sustainability can be successfully initiated and implemented in Asian developing countries in a wide range of conditions and sectors.

Despite these encouraging cases, many local government leaders are not initiating or supporting sustainable consumption initiatives. One possible reason is that local leaders may not be convinced that sustainable consumption is relevant to local issues, especially in developing countries, although it must be stressed that this study did not explore the factors affecting the motivation of local leaders. Nevertheless, the cases in this chapter should provide encouragement to local leaders that sustainable consumption initiatives clearly can be effectively formulated to address local issues. These cases also highlight the role that NGOs or other groups can play in explaining the benefits of such projects to the local community in order to gain the support of local government leaders. It is important to understand that despite good intentions of project proponents, sometimes local leaders and other stakeholders have difficulty understanding the local benefits, and sometimes project proponents have miscalculated the potential effects of the project. Some cases demonstrate

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that multistakeholder consultation and dialogue can be important not only in helping stakeholders to understand a project's benefits, but also in helping project proponents to understand the limitations of their original plan and to adapt it more appropriately to local conditions. Therefore, these cases should provide encouragement to local government leaders to adopt a more positive stance towards sustainable consumption projects, and also encouragement for project proponents (which may include local governments in some instances) on how to improve the linkage with local issues.

To conclude, implications for local governments working on sustainable consumption issues at the local level are as follows:

- Local governments, particularly in developing countries, are encouraged to do more facilitation and enabling so that other local actors such as NGOs can implement activities, thus better utilising local stakeholders' grassroots networks and mobilisation capacity. Local governments could support such community organisations by providing information, finance and capacity development for community leaders. Local governments could consider enhancement of their own facilitation capacity as a long term capacity development objective.

- At the designing and formulation stage of new initiatives, local governments are encouraged to incorporate local social, environmental and economic interests and concerns into sustainability projects and programmes. This is especially the case when a new initiative starts as part of a national programme or a project supported by international organisations that already have a specific sustainability agenda that is not necessarily directly related to the local context.

- Mayors and other senior local government leaders should take the initiative to coordinate and mobilise resources within and outside of local governments, and to persuade local stakeholders. However, even simple encouragement of working level officials or other stakeholders can be helpful.

- Working level officials in local governments should take advantage of the window of opportunity created when local political leaders make a commitment to support the formulation and implementation of initiatives for local sustainability.

- In order to secure financial resources for initiatives, national governmental programmes and assistance by international actors could be mobilised. However, it is better for local governments to use these resources and opportunities to implement their own policies and programmes to cope with local issues, and not to be fully directed by external supporters. Local governments should be selective in order to maintain local ownership of initiatives.

- It is important to have a clear plan to ensure that new initiatives can become self sustaining, especially when external support is provided.

- Designing and implementing adequate processes for communication among stakeholders should be a priority. Local governments or NGOs need to coordinate interactions among different local actors engaged in new initiatives. Occasional repetition of communication and dialogue can help to identify perception gaps among stakeholders and to create and maintain momentum. Communication is also important to identify local concerns and interests, foster general understanding of sustainability issues, and develop an understanding of the linkages between them. Utilisation of existing active local social networks is a conventional way to promote local engagement.

Notes

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2. Garcia-Sanchez and Prado Lorenzo (2009, 1041) state that “the number of research papers dedicated to analyzing the implementation level of the Local Action Plan is very low.”
3. RISPO-I was part of the Asia-Pacific Environmental Innovation Strategy (APEIS) Project, http://enviroscope.iges.or.jp/contents/APEIS/RISPO/
4. http://www.apfed.net/ki/database/gp.php

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