

4. Creating an enabling environment for scaling up and replication

A well-managed waste-to-resource facility is one that is sustainable. Such facilities can be scaled up (their processing capacity can be increased) or they can be replicated (new facilities built in other parts of the city or country). Scaling up and replication are the outcome of successful pilot projects and should be the ultimate goal of waste-to-resource initiatives. This section explores how scaling up and replication can function and also addresses common challenges. It offers lessons on viable platforms for replication, including at the local and national levels, and discusses the national and local policy environment most conducive to replication.

4.1 The importance of an enabling environment

Scaling up is a long term goal requiring shifts in policy and behaviour. The most important pre-condition for scaling up waste-to-resource operations is a readiness for change. Scaling up means that more and more communities, businesses and government bodies will be engaged and expected to adopt new practices. These key stakeholders need to be prepared to commit to long-term change before success will be achieved. Change should be guided by a systematic approach that expands from a single community to the rest of the city or society.

Large-scale behaviour change requires an enabling environment, which comprises supporting policy, values and attitudes as well as a receptive market for the sale of products processed by the waste-to-resource facility. Local policy must be adapted to support waste separation at source, separated waste collection and transport, and the needed practices of reducing, reusing and recycling (3R). Beyond the municipality or province, changes to national policy should also be sought. National waste management guidelines, strategies, policies and plans should be underpinned by the 3R principles. Because behaviour change is largely a product of education, the approach, practice and philosophy of the 3Rs should be integrated into national education policy, curricula and school infrastructure and routines.

Scaling up should be modular and incremental. The IRRRC is a small-scale, decentralized, community-based, waste-to-resource model usually servicing a specific ward, commune or community. It is thus reliant on the community it serves. To expand the waste-to-resource initiative to other communities within a city, new IRRRCs can be built. In this way, expansion can be modular and incremental (community-by-community, city-by-city). In Matale, for example, the first IRRRC was built in 2007 to process 3 tonnes of waste per day. In 2009, a second facility was built and a third in 2011. The total capacity across all plants was nine tonnes in 2015, and the local and national government have plans for further expansion.

Incremental replication has several benefits. First, it means that operators, government bodies and communities are engaged in an ongoing learning process as new methods and practices are introduced, adopted and refined by all stakeholders. Second, it reduces the risk of failure because new facilities are built only once pilot facilities are operating well and a degree of success has been obtained. Third, as new facilities are built, the overall resilience, flexibility and robustness of a city's waste-to-resource system increases.

Engaging markets can support the sale of biogas, compost and other products. In some countries, chemical fertilizer is subsidized heavily by the national government to increase food production. Reducing the retail price of chemical fertilizer through subsidy tends to exert downward pressure on compost prices also because the products are linked to the market. Rectifying market distortions within the fertilizer industry can greatly improve the competitiveness of compost in the market. In other countries, chemical fertilizer is not subsidized, but compost is undervalued in markets because buyers do not understand its real value. Following research in Bangladesh agricultural yield can be increased by 30 per cent by adopting a regime that combines chemical and organic fertilizer, as compared with using only chemical fertilizer. In both cases, waste-to-resource initiatives can benefit from an improved national market for compost. Similarly, national energy markets are often distorted by subsidies. This can make it challenging for waste-to-resource facilities to sell biogas on local markets, where it has to compete in price against subsidized gases.

4.2 Strategies for advancing policy change and replication

Policy change is best achieved following a successful pilot project. To support policy change, policymakers can draw on successfully piloted waste-to-resource initiatives. Findings, lessons and documented experiences from the field are particularly useful and help to ensure that new or revised policies are in line with local conditions and realities. Piloted initiatives quickly develop a wealth of information, options and strategies, and the managers of pilot initiatives are usually pleased to share findings with policymakers. Similarly, community groups engaged in waste-to-resource practices are also usually willing to discuss their experiences.



Box 17. From pilot testing to national policy in Bangladesh



The co-composting facility in Kushtia, a small town in Bangladesh, combines organic waste, such as fruit and vegetable scraps, with human waste collected from septic tanks in the city. This produces a high-quality organic fertilizer, sold mainly to rice farmers in the surrounding Kushtia District, a large producer of rice. Many towns and cities in Bangladesh suffer from poor sanitation and large quantities of organic waste. As a result, co-composting is an attractive idea for the sustainable management of human waste. The Kushtia facility was established in 2012 and was the first in Bangladesh to practise co-composting.

The pilot project has led to important policy changes, based on the findings and experiences it has generated:

- The National Sanitation Strategy, 2005 was revised in 2014 because of the experiences with the Kushtia facility. In the 2005 strategy, responsibility for municipal sanitation was assigned to municipal councils. However, there was limited technical information on how to undertake this responsibility. Following a review of successful pilot initiatives in Bangladesh, including the Kushtia project, the 2005 strategy was revised. It now incorporates principles and technical information on sustainable faecal sludge management, nutrient recycling and the co-composting of waste—all of which are important methods pioneered in Kushtia. As a result, the new strategy provides far more specific information to municipalities on how to achieve sustainable sanitation and directly support co-composting as a viable technique.
- The National Tax Schedule, 1977 set tax rates for different entities, including the tax rate that municipalities can levy on residents for basic services, such as waste collection and sanitation. In 2014, a new tax schedule was approved. Previously, tax rates were too low for municipalities to manage sanitation needs appropriately. Under the new schedule, municipalities are authorized to increase the sanitation tax on buildings and land—as a result of experiences gained in Kushtia as part of the co-composting project. This facilitates the improvement of sanitation services, including faecal sludge management and other sustainable practices.

Pilot projects help to generate detailed, practical and technical experience that can be incorporated into national policy. This facilitates the operationalizing of national objectives and goals. In the case of Kushtia, the experiences in co-composting as well as broader implications, such as fiscal design, have been instrumental to broader change.

Source: ESCAP and Waste Concern.

National programmes and financing are especially useful for replication.

Progress and efficacy in replicating waste-to-resource initiatives are greatly enhanced when the initiative is supported through national programmes. In particular, by incorporating or transforming a waste-to-resource initiative into a national programme, national policy and financing can be mobilized in support. Several types of national programmes can act as vehicles for the replication of waste-to-resource initiatives. These include solid waste management programmes, sustainable urban development programmes and public health programmes. Programmes may either be pre-existing or new. For pre-existing programmes, the incorporation of waste-to-resource principles, approaches and models may require a change of phase.

Box 18. Scaling up waste-to-resource initiatives in Sri Lanka

When the first IRRC was piloted in Sri Lanka in 2007, no one imagined it would be adopted into a national programme six years later. “We began to pilot the IRRC model in Matale because the local government was interested and the need was great,” says Jayaratne Kananke Arachchilage, President of Sevanatha Urban Resource Centre, an NGO based in Colombo. “At that time, the IRRC was totally new here. The national Government was committed to different strategies for dealing with municipal solid waste. That has all changed,” he says.

The Pilisaruru National Solid Waste Management Programme is Sri Lanka’s largest endeavour for sustainable waste management and seeks to improve the reuse of natural and recyclable materials across the country. Under the first phase of the project (2008–2014), waste-to-resource facilities were established in a number of towns and cities but using different techniques and processes to those used in the IRRC model. Following recognized successes in the piloted IRRCs, the Central Environment Authority announced in 2015 that the Pilisaruru Programme would adopt the IRRC model to improve waste-to-resource practices across the country.

After the adoption of the IRRC model into the Pilisaruru Programme, funding was made available at the national level to support replication. Under the programme there are plans to expand the facilities in Matale and Ratnapura as well as convert existing facilities in other cities into IRRCs. The adoption of the IRRC model stemmed from the sustained engagement by facility operators and partners with the Central Environment Authority, strong support from local government and positive results for the cities involved.

Source: ESCAP.

International climate change financing can be leveraged for replication.

Because waste-to-resource initiatives reduce the emission of methane, a greenhouse gas, they can be considered climate change mitigation projects. As such, they are eligible to receive financing from international climate change mitigation mechanisms. Such financing, especially when linked to a national programme, can greatly increase opportunities for replication of a waste-to-resource initiative.

In particular, climate change mitigation financing can be sought via nationally appropriate mitigation actions (NAMAs), a mechanism designed to provide developing countries with support for climate change. NAMAs can help countries implement policies and targets they may already have in place. This has been the case, for example, in Viet Nam. Additionally, NAMAs for the waste sector typically combine greenhouse gas emission reductions with strong co-benefits. Funding is also available for low-emission development strategies. Both mechanisms can link well with waste-to-resource initiatives seeking replication at the national level.

Box 19. Leveraging climate change financing for waste in Viet Nam

To replicate waste-to-resource initiatives in Viet Nam, the Government has been working with ESCAP to develop a nationally appropriate mitigation action (NAMA). “We expect that this NAMA can stimulate cities in Viet Nam in adopting waste management practices that are more sustainable and climate friendly,” says Tran Thuc, Vice-Chair of the Viet Nam Panel on Climate Change and former Director General of the Vietnam Institute of Meteorology, Hydrology and Environment, a research institute affiliated with the Ministry of Natural Resources and Environment.

Viet Nam is highly committed to addressing climate change and is pursuing strategies for both adaptation and mitigation. Following good outcomes of the waste-to-resource initiatives in Quy Nhon and Kontum, the Government is exploring options and support for replicating this model at the national level. “We are also hoping for the support of international donors in making this programme a reality, especially in building the capacity of local governments and in unlocking investment, both foreign and national, for ‘waste-to-resource’ initiatives,” says Mr Tran.

Source: ESCAP.

4.3 Lessons learned for enabling and scaling up waste-to-resource initiatives

National and local governments have successfully created an enabling environment and scaled up waste-to-resource initiatives by implementing a range of strategies, as the following outlines.

Build a supportive policy environment by:

- ***Ensuring sustainable solid waste management is a national priority.*** National waste policy should support waste-to-resource initiatives by adopting the 3R principles and objectives. Sustainable solid waste management needs to be seen as a priority within broader socioeconomic development policy.
- ***Exploring climate change financing options.*** International funding is made available especially to low- and middle-income countries to pursue climate change mitigation projects and programmes. Because waste-to-resource initiatives reduce methane emissions, policymakers in Pakistan, Sri Lanka and Viet Nam have utilized climate change financing as a viable funding source to scale up operations. Other governments could explore this option.

Prioritize compost quality improvement by:

- ***Establishing quality standards for organic fertilizer at the national level.*** The establishment of minimum quality standards for specific products helps to secure the market and reassures consumers. To support the market, consumer choice and compost production, policymakers should put in place minimum standards for organic fertilizer that are aligned with international criteria and national needs. In Bangladesh, the Government has greatly supported compost production through the adoption of national quality standards.

- ***Ensuring compliance of all compost producers through regular inspection.*** An essential component of such standards involves inspection of compost products. This should be carried out regularly by the producer and as an obligation for the marketing of products. National standards should indicate the regularity of testing, and a relevant government body could be assigned for oversight.
- ***Promoting certification and the use of certified organic fertilizer.*** As a result of inspection, compliant producers should receive certification. Certification should include a specified period of validity and permit the use of a government insignia on compost packaging to indicate the quality.

Gear national markets to support waste-to-resource products by:

- ***Reducing market distortions against compost.*** Many national governments maintain subsidy regimes for chemical fertilizers. These subsidies force down the price of other fertilizers, including organic fertilizer, like compost. Policymakers need to review and correct market distortions created through subsidies to chemical fertilizers to level the field for compost products to compete.
- ***Reducing market distortions against biogas and electricity.*** National subsidies for fuels, such as liquid petroleum gas (LPG) and butane, common cooking gases and electricity, also distort the market for biogas and electricity produced from biogas. Policymakers should review and correct market distortions created through subsidies for LPG and butane gas to also level the field for biogas to compete.

These lessons and recommendations are based on the experience of ESCAP and a range of national, provincial and local governments as well as NGOs, social entrepreneurs, community groups and other actors in eight cities across the Asia-Pacific region. The specific background, context, activities and findings from each city are presented in Part III in a series of eight fact sheets.