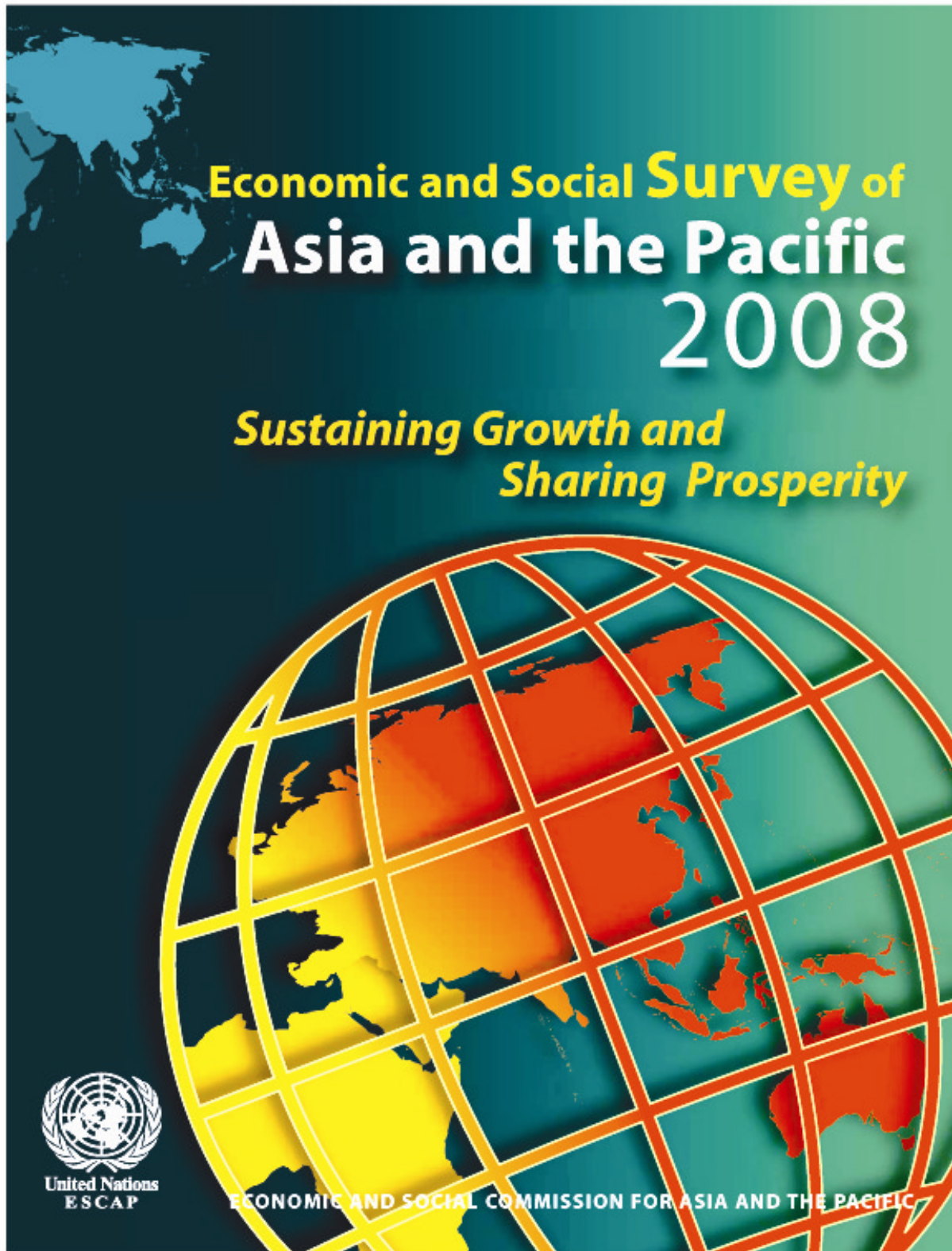


**Waste Concern's Recycling Model Using Carbon Financing
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Box 1.7. Cash from trash – financing mitigation and adaptation through decentralized solid waste management

Under a business-as-usual scenario, by 2020 GHG emissions due to urban garbage will increase by at least 25%, even as municipal governments find it more difficult to collect and dispose of solid wastes. At present, most local governments use end-of-pipe solutions, focusing on collecting and disposing of wastes once they have been generated. These are capital- and technology-intensive – and thus costly. Solving the problem of solid wastes requires a new approach that minimizes methane emissions, treats both organic and inorganic wastes as resources, minimizes transportation of waste and provides regular incomes and better working conditions for waste pickers.

ESCAP identified such an approach, initiated by Waste Concern, an NGO in Bangladesh, and adapted and tested it in Matale, Sri Lanka, and Quy Nhon, Viet Nam. Under this approach, decentralized treatment plants, covering 1,000-1,500 households and treating 3-4 tons of wastes per day, are built in the neighbourhoods they serve. Waste is collected daily using hand carts and motorcycle-powered carts. Households are trained to separate wastes at source. Waste is then brought to the treatment plant, where it is sorted again. Recyclable materials (10-20% of the waste) are sold to junk dealers, organic wastes (70-80%) are composted, and rejects (5-10%) are collected and taken to the dump every one or two weeks. Strict quality control ensures optimum quality of compost. At present, raw compost is sold, but in the future some compost will be enriched with nitrogen, phosphorous and potassium to make designer organic fertilizer tailored to the requirement of local farmers. Each plant is designed as a profit-making public-private partnership with three main streams of income: collection fees from the users, sale of recyclables and sale of designer organic fertilizer.

An aerobic process that does not produce methane, composting considerably reduces GHGs. Because this approach uses motorcycle carts and hand carts and treats solid wastes within the neighbourhood, it minimizes transportation-related GHGs and fuel costs for the local government. ESCAP estimates that up-scaling could eliminate 7.5 million tons of CO₂ (equivalent) per year.

The approach also contributes to adaptation. Organic designer fertilizer is more cost-effective and beneficial for farmers than chemical fertilizer. Unlike chemical fertilizer, organic fertilizer returns organic matter to the soil, replenishing it, increasing its fertility and reducing the chemical fertilizer needed. Organic fertilizer also enables the soil to better retain water, conserving water. Increasing soil fertility and conserving water are key adaptation strategies for Asia and the Pacific recommended by IPCC (2007).

This approach works best in small and medium-size towns (populations 50,000-100,000) that are surrounded by agricultural areas and where the opportunity cost of land is relatively low. Scaling-up can be financed by selling VERs and CERs. Combining the sale of VERs and CERs with the revenues from user charges, sale of recyclables and sale of organic designer fertilizer can bring in potential revenues of up to \$37 billion per year. Instead of spending resources on waste, local governments can make cash from trash.

difference, particularly in choices of food, transport and recreation. Sea level rise and the resulting climatic hazards will require greater efforts in early warning, sea defence construction and architectural innovation. Public policy should be redesigned to suit changing needs in health, water resources, disaster management, coastal zone management and agriculture and food security.

Natural disasters will be a particular challenge for smaller towns and cities, which have concentrated populations and poor urban planning. Lacking basic environmental and disaster-management infrastructure and services, these places have much laxer enforce-

ment of building control measures than do larger cities. Almost 50% of the region's urban population lives in such towns and cities. The need is not for additional resources but for improved governance structures and institutions. Governments, for example, could work with local NGOs and community-based organizations to develop local disaster management plans. Lessons from Bangladesh could be useful for other countries of the region.

Governments in Asia and the Pacific are likely to face eco-refugees from their own countries and elsewhere in the region, seeking shelter against short-term and