

The last 20 years have seen the population of Marilao increase at an average rate of 9.4% per year - 4.5 times the national average. Farm to city migration accounts for 85% of this population increase in the city.



Leonora Angeles

Compost ready for distribution

Investment to in The Philippines

Reduce Urban Poverty

In 1995, the 1996-2000 local plan document set the tone for moderation. The local agricultural policy, as part of this plan, emphasised productivity improvement combined with access to financing. At the time of the plan's formulation, 58% of the municipal agricultural land had been converted to human settlements, industry, services, commerce and trade, resulting in degraded soil, a deterioration in surface water quality and smog, while yields for traditional land-based crop production have consistently declined. In addition, the urban sprawl changed the value of the agricultural land market. Landowners opted to sell their property, given these benefits, and the farm tillers were only too willing to realise immediate financial gains that would have required 63 more years of hard work in agriculture.

COMPOSTING PROGRAMME

These technical and economic realities did not favour the implementation of the 1995 local policy on agriculture. The opportunity to reform the policy presented itself when the municipality started, in 1997, to produce compost with the biodegradable waste generation from 22,363 households, two pub-

lic markets and approximately 353 small-scale enterprises. Compost application studies were carried out with the community stakeholders; i.e. traditional farmers, middle-class housewives and the landless urban poor, the latter having the strongest need for urban agriculture.

A survey (sample size 881 households) revealed that nearly half of the landless urban poor households are earning less than US\$3 per day with no fixed or permanent employment status. The income level of the urban poor is not far from that of the traditional farmer in Marilao, at US\$2.10 per day. Of the total income of the landless urban poor, 67% is spent on food. Reducing food expenditures for the urban poor is the primary goal of the compost-based production programme.

THE INVESTMENT SCHEME

From 1998-2001, the municipality invested human resources, time and logistics into the collection of raw materials (biodegradable waste), and the processing and use of the compost for agricultural production. The municipal investment of the compost production includes land, building, machinery, education campaigns, and a collection vehicle.

The vegetables are grown in soft plastic pots. These pots are cheap and easy to move. They can even

be stacked up like terraces, in layers or in circles to optimise the use of space. Green leafy vegetables can be grown 6-8 times year-round. Other vegetables, like tomato and green pepper have nutritional value, while the vegetables with vines have a longer fruiting cycle and space limitations to consider, and are therefore planted on the rooftop to reduce heat emissions. Advice and training is further given on crop choice, technology for compost-based agriculture, and the savings programme. Each poor household has the capacity to produce home-grown food. The

The Flight of Poverty from Rural To Urban Areas

Mrs Adelfa Co is a landless urban poor woman earning an average of US\$2 per day (P100) as a garment worker and dressmaker. She has no permanent employment and her short-term work hours have been in decline for the last five years. She settled informally by an abandoned railroad track 15 years ago, together with her brother, mother and two children in a 30 m² area. She learned about the urban agriculture programme of Marilao as a participant of the workshop on urban poverty reduction. There she saw the model on compost-based vegetable production and immediately recognised the potential to address the chronic food shortage on her table. She joined the local urban poor association's savings and loan programme. Each day, Adelfa set aside one peso (US\$ 2 cents), and after four weeks received the composted soil, seeds and plastic pots. Two months later, she started harvesting vegetables for the family. Now, she is planning to expand her rooftop vegetable pot production not only to augment the family food supply but also to sell the surplus in the local market.

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Table 1 Cost/Benefit Analysis of compost-based, home-grown potted vegetable production

| Particulars | Calculation Base | Amount (US\$) |
|-------------------------------------------------------------------------------------|-------------------------|-------------------|
| Benefits | | |
| Monetary value of vegetable production (560 pots @ 0.15kg/pot @ US\$0.2/kg/45 days) | US\$0.237/day @ 30 days | 11.20/month |
| Cost of Production | | |
| Seeds | | 0.02/month |
| Water fee, for the maintenance of the artesian well | | 0.05/month |
| Depreciation charge for plastic pots | | 0.17/month |
| Total Cost of Production | | 0.24/month |
| Beneficiary Daily or Weekly Savings Scheme to sustain production | | |
| Daily or Weekly Savings | US\$0.02/day or 0.14/wk | 0.30/month |

Source: Municipal Urban Poor Affairs Office

cost/benefit of home-grown vegetable production is presented in Table 1.

The cost of labour is not included as this is all based on family labour. For the vegetable production to be financially sustainable, the monthly cost of operations must be recovered. An individual mandatory savings scheme of US\$0.02 per day (two cents) or US\$0.30/month was implemented. This amount of mandatory daily savings is equivalent to 9.26% of the US\$3.24 average daily income of the landless urban poor. This level of mandatory savings was seen to be possible based on survey results.

To start the implementation of both the compost-based, home-grown potted vegetable production and the mandatory savings scheme, the municipality allocated funding for the initial purchases of plastic pots and seeds, and for the organisation and management systems. Both the constraints of limited access to land and the cost of inputs have been appropriately addressed.

RESULTS AND PERFORMANCE

The compost-based, home-grown production using potted vegetables not only reduced the expenses of the landless urban poor but also ensured a supply of safe, fresh and nutritious food. In addition, the savings scheme among the urban poor community was launched to ensure against a handout mindset. The investment in compost production provided the stable supply of the soil media for use in urban agriculture. The diversion of the biodegradable waste stream resulted in the recycling of materials and the reduction of methane emissions, as well as the reduction in land required for final disposal of municipal waste.

The on-site management system of the savings programme installed included individual account ownership (personal passbooks), on-site safe keeping, clear and straightforward recording and accounting, and spot auditing among peers (among local organisations and those from urban poor associations from other cities). One month of training followed by two months of operations resulted in nearly 10% of the landless urban poor having savings passbooks.

REPLICABILITY

Considering that there are 2,500 landless urban poor households, the potential number of pots for urban agriculture total 2.8 million pots, for which approximately 5,600 tonnes of compost will be required. This amount of compost can be supplied in four years given the existing production capacity. After that, the excess compost production will be used for replenishment. Based on compost application studies, the potential production volume is more than enough to supply the estimated consumption of the Marilao population, while surplus can serve markets in Metro Manila (only 5 km from the border).

Noteworthy is the fact that the average 30 grams per capita consumption of green leafy vegetables in the Philippines has reached its lowest level in recent years. The urban agriculture programme of Marilao must continue the promotion of the utilisation of rooftops among the landless urban poor. Investment in promotional activities has been included in the formulation of the next five-year (2003-2008) development plan for municipal investment.

LESSONS LEARNED AND RECOMMENDATIONS

Investment in urban agriculture in Marilao is one of the strategies for increasing household income and improving food security of the landless urban poor. As with any economic activity, the investment of Marilao considered individual and organisational cost/benefit factors. The stakeholders included the cultivators, the homeowners from the

middle-class sector, and the landless urban poor.

The investment in technology has evolved from local initiatives, in response to local challenges – addressing the burgeoning solid waste problem with optimal material recovery and minimal investment in final disposal methods. The process included the participation of the middle-class households with their segregation of waste generated. The investment in educating these households on proper solid waste management included the technology of social marketing types of activities and logistics. As a parallel support measure, municipal investment in collection was put in place. The municipal collection was implemented with no additional fees to the households involved. Cost recovery did not involve selling the compost but rather using it to address food security among the landless urban poor. Eventually, there will be a potential for exporting the vegetables produced within urban Metro Manila.

Restructuring the municipal organisation has required institutionalising the urban poor affairs office. This included the survey and eventual development of a database, an orientation on the workings of associations, and support services related to health, education and employment.

Perhaps the most unique feature of this programme has been the combination of urban agriculture with the formation of a capital fund among the growers. This will ensure the sustainability of this innovative venture into the supply of safe, fresh, nutritious and healthy food.

From the Dirtiest to the Cleanest Municipality of the Province

The municipality of Moncada is located 153 km north of Manila, and has a population of 49,607. Of its total 8,875 hectare land area, 64% or 5,544 hectares is used for agriculture. Rice farming accounts for 76% of the total agricultural land.

In the last quarter of 1997, the municipality was rated as the second dirtiest in a province-wide competition. The municipality took this as a challenge and embarked on a solid waste management programme the day after the rating was issued. From 1999 to 2002, the municipality won first place as the cleanest municipality of the province.

THE MONCADA WOMEN'S CREDIT COOPERATIVE

The Moncada Women's Credit Cooperative was founded in 1991 by 43 women cooperators, with the goal of providing an alternative source of financing as well as a savings programme for the households. Starting with a capital of approximately US\$800, the next ten years saw the cooperative grow to its current asset base of US\$900,000, with a membership of 1,150 housewives, women entrepreneurs, teachers, market vendors, employees and even overseas Filipina workers. The all-women membership policy is grounded on the belief that Filipina women are given the task of managing the economics of the home specifically in ensuring that there is enough budget to cover the basic expenditures of the family as well as saving into the local capital formation to address poverty reduction.

WASTE MANAGEMENT

To address the challenge of managing solid waste, the wife of the municipal mayor who is the founder and chairperson of the Moncada Women's Credit Cooperative, together with several officers of the cooperative, went through a

series of learning visits and seminars on good management practices in solid waste management.

The conclusion drawn by the municipality was that solid waste management has the potential for revenue generation. At the same time, the chairperson of the cooperative had been elected as mayor of Moncada in 1998, and as an immediate action step, a Memorandum of Agreement (MOA) was executed between the Municipality of Moncada and the Moncada Women's Credit Cooperative for a Zero-Waste Management and Recycling Project. The MOA has set the following tasks:

- ❖ solid waste reduction in the public market and its contiguous area;
- ❖ waste diversion through recycling of plastics, aluminium, paper, cardboard and bottles;
- ❖ provision of business opportunities, specifically the buying and selling of recyclables; and
- ❖ conversion of biodegradable waste into organic fertiliser in combination with animal manure and other useful waste materials.

Both the municipality and the women's credit cooperative, had a relatively stable financial performance and invested 57% and 43%, respectively, a total of US\$119,152 during the last four years of operation.



Joseph Batac

Potted vegetables on the roof

The municipality further undertook an education campaign for the proper management of solid waste in the public market and the urban areas. This campaign was supported by a collection system given four additional vehicles of investment by the municipality.

COMPOSTING PROGRAMME

The vendors from the public market were the first to respond with the segregation of recyclable materials from biodegradable waste. This necessitated the establishment of a composting facility in the early part of 1999.

The production of compost started in mid-1999, the compost being sold to the members of the cooperative and to other taxpayers based on an incentive scheme of a local ordinance (one bag of compost, US\$2.70 per bag, for every US\$30 of real property tax). The users of the compost have experienced an average 16% per annum increase in yield and an 8% reduction in expenditures given the savings from reduced use of chemical fertilisers.

The municipality and the women's credit cooperative have also looked into the possibility of getting the whole of Moncada into organic farming in the coming years. The municipality will cover the cost of additional investment for collection of bio-waste while the women's credit cooperative will continue to undertake the marketing and operation of the facility.

To date, the Moncada Women's Credit Cooperative has been the only cooperative to survive for more than ten years in the province. Both the chairperson and the general manager of the Moncada Women's Credit Cooperative have attributed their success to the basic goodness of the Moncada women in ensuring a non-nonsense, strict discipline in the management of finances, given the work ethics of patience, thrift and commitment. The engagement of the cooperative into solid waste management is rooted in the natural role of women in maintaining cleanliness in the households as well as general member attitudes towards health and sanitation. As such, the women members are the most potent "salespeople" and marketers of compost from their farmer husbands.

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