

Allotment Gardens for Cagayan de Oro City: Improved Access of the Urban Poor to Land for Agriculture

Robert J. Holmer¹, Merlito T. Clavejo², Stefan Dongus³, Axel Drescher⁴

1 Introduction

Community gardens are defined as gardens where people share the basic resources of land, water, and sunlight. This definition includes both allotment and common gardens. Allotment gardens are characterized by a concentrated area consisting of several small parcels of about 200 to 400 m² that are assigned to individuals or families who are usually organized in an association. Allotment gardens differ from common gardens in such a way that the parcels are cultivated individually while in common gardens the overall area is tended collectively by a group of people (MACNAIR, 2002). An allotment garden is made legally available by the city authorities to the association to be used exclusively for growing of vegetables, fruits and cut flowers, but not for residential purposes. Mostly it includes a shed for tools and other garden implements.

Since March 2002, a project is implemented in Cagayan de Oro, Southern Philippines, to establish four pilot allotment gardens in different parts of the city with financial assistance of EuropeAid's AsiaUrbs Program. Those gardens shall serve as a model and learning center to enable a future extension of allotment gardening in Cagayan de Oro and other Philippine cities. The allotment garden project is coordinated by Xavier University College of Agriculture and the city government of Cagayan de Oro in cooperation with two project partners from Germany, namely Schelklingen City and the Albert-Ludwigs-University, Section Applied Physiogeography of the Tropics and Subtropics (APT), Freiburg City. The project has also a community-based geographic information system component (GIS) under the auspices of the Belgian cooperators Dinant City and the Facultés Universitaires Notre Dame de la Paix (FUNDP), Namur City.

2 Historical Background of Allotment Gardens in Germany

The history of allotment gardens in Germany starts in the early 19th century, when the first Allotment Gardeners Association was founded. The idea of Allotment Gardening reached a first peak after 1864, when the so-called "Schreber-movement" started in the city of Leipzig in Saxony. A public initiative decided to lease areas within the city making it possible for children to play in a healthy environment, and in harmony with nature. Later on, these areas included actual gardens for children (the German term "*kindergarten*" was coined during these days), but soon adults were tending to take over and cultivate these gardens. This kind of gardening on allocated areas rapidly gained popularity (KASCH, 2001).

During the period of industrialization allotment gardening became essential to ensure food security for the large number of impoverished workers and their families who migrated from rural areas to the cities to find employment in the factories. Very often, these families were living under extremely poor conditions – a socioeconomic situation somewhat similar to the booming development of Philippine cities today. To improve their overall situation so-called "gardens for the poor" (later termed as "allotment gardens") were established when cities, factories and monasteries provided plots for the urban poor allowing them to grow food for their families and to keep pigs, chicken, and other small domestic animals.

The aspect of food security became even more important in the first half of the 20th century. During World Wars I and II, the socio-economic situation was very miserable particularly in terms of the nutritional status of people. Many cities were isolated from their hinterlands, and agricultural products from their rural surroundings did not reach the city markets anymore or were

¹ Manager, Periurban Vegetable Program, Xavier University College of Agriculture, 9000 Cagayan de Oro City, Philippines, email: rjholmer@philcom.ph

² Agronomist, City Local Environment and Natural Resources Office, City Hall, 9000 Cagayan de Oro, Philippines

³ Technical Assistant, Asia-Urbs Project, City Government, 89601 Schelklingen, Germany

⁴ Director, Applied Geography of the Tropics and Subtropics, Albert-Ludwigs-Universität, 79098 Freiburg i. Br., Germany

sold at very high prices at the black markets. Consequently, food production within the city, especially fruit and vegetable production in home and allotment gardens, became essential for survival.

The importance of allotment gardens for food security was so obvious that in 1919, one year after the end of World War I, the first legislation for allotment gardening in Germany was passed. The so-called “Small Garden and Small-Rent Land Law”, provided security in land tenure and fixed leasing fees. In 1983, this law was amended by a “Republic Act for Allotment Gardens”⁵ (GRÖNING & WOLSCHKE-BULMAHN, 1995).

The importance of allotment gardening in Germany has shifted over the years. While in times of crisis and widespread poverty (from 1850 to 1950), allotment gardening was a part time job, and its main importance was to enhance food security, its present functions have to be seen under a different point of view. In times of busy working days and the hectic urban atmosphere, allotment gardens have turned into recreational areas and locations for social gatherings, and are considered as a beloved hobby for millions of practitioners. Nowadays, allotment gardens are conceived as an integral part of the public green belt area in cities (CROUCH, 2000, DRESCHER, 2001).

3 Objectives

The objectives of the pilot project in Cagayan de Oro are:

- To facilitate legal access of urban poor families to land for agricultural activities
- To improve the nutritional status of the urban poor through year-round availability of affordable, clean and healthy vegetables, particularly in terms of micronutrient, vitamin, phytochemical and protein supplies.
- To institutionalize the participatory community-based support to the city’s integrated solid-waste management program.
- To substantially reduce the amount of solid waste dumped to the city landfill site due to recycling of materials and converting biodegradable matter into compost.
- To strengthen the urban environmental resources management by the community-based use of geographic information systems.
- To avail of baseline data to support the elaboration and implementation of legal codices, administrative and technical regulations in the field of solid waste management and urban agriculture, particularly allotment gardens, rehabilitation and protection of the environment, land use and public health.
- To foster the cross-sectoral collaboration between city government and research institutions as well as with other government and non-government organizations at local and international level.

⁵ Bundeskleingartengesetz

4 Methodology

4.1 Identification of pilot areas

In three of the four pilot areas (barangays⁶ Bugo, Gusa and Lapasan) the city government of Cagayan de Oro conducted earlier an UN-supported household waste segregation program. However, the segregation of wastes could not be sustained since – among other reasons - a viable outlet for the large biodegradable fraction was lacking. The College of Agriculture of Xavier University then recommended linking the solid waste management component with the production of vegetables in allotment gardens using compost made from the biodegradable wastes of the surrounding community. Expertise on composting and production of vegetables in an urban setting were gained earlier in another EU funded research project (HOLMER, 2000). The German partners Schelklingen and APT agreed to contribute their expertise on the administrative aspect of allotment gardening, particularly on legal aspects and community organizing.

The fourth pilot allotment garden in barangay Canitoan is located close to the city's controlled landfill site. It was selected to be used by the Cagayan de Oro garbage pickers, one of the most socially disadvantaged groups of the city. The garbage pickers are one of the major stakeholders of the AsiaUrbs project. They agreed to collect the wastes from the private households in the project pilot areas, which are segregated into three fractions, namely (1) biodegradables, (2) recyclables, and (3) residual wastes (see also **figure 1**).

SUGGESTED ISWM SYSTEM: (Pilot Barangay Level)

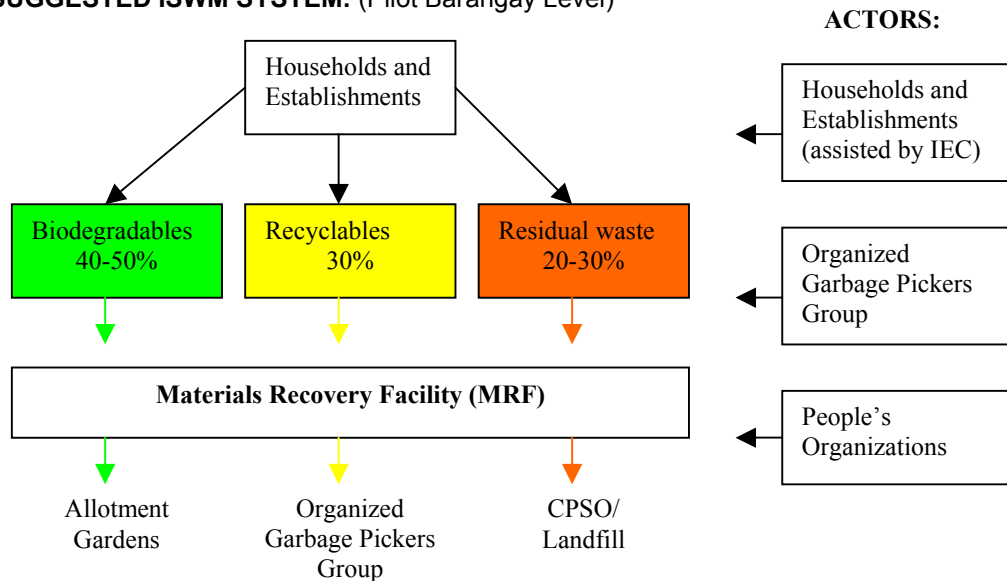


Figure 1: Integrated Solid Waste Management Framework of the AsiaUrbs Project

All the three fractions are brought to a centralized collection center, the so-called Materials Recovery Facility (MRF), which is mandated by Philippine law (R.A. 9003)⁷. The MRF is established within the allotment garden. While the garbage pickers keep the recyclable fraction as the payment for their collection services, the biodegradable wastes are composted by the allotment gardeners. The remaining residual waste is collected by the City Public Services Offices for final disposal at the landfill site. As an additional benefit from the project aside of getting the recyclables, the garbage pickers are also provided with their own allotment garden at Canitoan as a complementary source of livelihood.

⁶ barangay = smallest local government unit in the Philippines

⁷ Republic Act 9003 (Ecological Solid Waste Management Act)

4.2 Selection of beneficiaries

The pilot allotment gardeners of the AsiaUrbs project can be categorized into two main groups:

- Those that already have taken up urban agriculture as part of their survival strategy. However, due lack of space, these activities were confined to production of vegetables in containers (such as used cans or plastic bottles) or in tiny patches along the roadside.
- Those that are in need of alternative sources of subsistence and income but have not taken up farming due to lack of access to land (such as the garbage pickers of the landfill site).

The project steering committee composed of members of the different project stakeholders defined the following qualifications for pilot allotment gardeners:

- a) Low family income
- b) Residents of the pilot barangay with barangay clearance
- c) Residing near the project site
- a) The beneficiating families are not related to each other up to the 3rd degree of affinity
- d) Willingness to do the actual garden work
- e) Willingness to cooperate and share experiences (i.e. follow recommended standard operating procedures, do composting at allotment garden area, cooperate during interviews, keep records of allotment garden activities such as production data, sales, etc.)
- f) Willingness to abide to provisions set by the project (i.e. through memorandum of agreement)
- g) Willingness to act as trainers for other interested parties after the project funding has ended to expand allotment gardening also to other areas of the city

Initially, the identification of allotment garden beneficiaries based on the above-mentioned criteria was left to the communities. This resulted, however, in certain constraints and inequalities (to be described later) that led to following optimized flow of activities for membership application as agreed upon by the project steering committee:

- a) The Information & Education Campaign Group (IEC) with assistance of Allotment Garden Technical Working Group (AGTWG) and a barangay organizer promote goals and objectives of allotment gardening to all households of the pilot area
- b) Interested households submit their application through the project assistant to the AGTWG
- c) The AGTWG pre-screens applicants and forwards a list of final candidates to the barangay council for approval. The AGTWG ensures that all major fractions of the community are represented.
- d) Barangay council approves/disapproves membership
- e) An acceptance ceremony will be conducted with a pledge of commitment by the beneficiaries.

4.3 General provisions set by the project

The following general provisions for allotment gardening were set by the project:

- b) One pilot allotment garden consists of eight individual families units
- c) Every individual family unit has a maximum area of 400 m² which is tilled by the family members at their own responsibility
- d) Allotment gardens are provided solely for agricultural purposes. No residential structures are permitted.

- e) The beneficiaries are expected to provide labor as their counterpart. Labor costs will not be shouldered by the project.
- f) The beneficiaries are expected to continue allotment gardening after the project period has ended.
- g) Composting of the biodegradable wastes coming from the integrated solid waste management component of the project will be done by the beneficiaries in the allotment garden area following the standard operating procedures provided by the AGTWG.
- h) The beneficiaries will form an allotment gardening association in which every family head is represented.
- i) Beneficiaries receive technical assistance from the AsiaUrbs project in forming an association.
- j) Association receives training on allotment gardening and composting organized by the AG Technical Working Group
- k) Association receives from the AsiaUrbs project agricultural equipment, tools and supplies necessary to start the operation
- l) Association receives assistance in availing land to be used for allotment gardening
- m) Association receives regular technical assistance in allotment gardening through a technician of the AsiaUrbs project who will visit the pilot area at least once a week.
- n) Member beneficiary rents tools and equipment from the association.
- o) Association opens an account from a reputable bank or cooperative where membership fees and other dues are deposited.

4.4 Identification of allotment garden sites

Suitable areas for allotment gardens were selected based on the following criteria

- Land that suits basic agronomic standards (leveled, not water logged, etc.)
- accessibility to water and transportation
- non or reasonable rental cost
- coherent area of at least 3200 m² to accommodate 8 family units of 400 m² each
- located within the pilot barangay.

Most of the open spaces in Cagayan de Oro are privately owned. Hence there was a need to advocate and promote the project goals and objectives not only to the respective barangay but also to private landowners. The areas in Bugo and Gusa were identified with assistance of Allotment Garden Technical Working Group (AGTWG) of the project, the barangay council and the beneficiaries. In both cases the land is owned privately. In Bugo, the landowner did not ask for rental payments but offered her area to be used for community purposes, while in Gusa, the allotment garden area is composed of two adjacent lots that are owned by different proprietors. In both cases, the owners agreed to the provisions set by the project. Land rentals are paid according to the usual rates for agricultural land in Cagayan de Oro and surrounding provinces. The area in Lapasan was identified by use of GIS at city hall. The AGTWG then made an ocular inspection of the area and after its approval, the barangay chairman approached the owner for a leasing agreement without rental payments. In the case of Canitoan, the land is owned by Xavier University who made the land available to the beneficiaries without rental payments. In all cases, memoranda of agreements were issued between all stakeholders that clearly state the provisions of the project. The landowner leases the area to the newly established allotment gardeners association, not to the individual members. The memorandum of agreement provides legal security for all parties: for the urban poor the access to land solely for agricultural purposes assuring the landowner that his property will not be squatted. As regards the time of tenure, both parties agreed to have initially a short-term pilot phase only to evaluate the benefits of the project

before subjecting to a long-term agreement. Hence, the memoranda of agreement stipulate a typical “win-win” situation as a necessary prerequisite for a successful implementation of the project activities.

4.5 Allotment Garden Set-Up

The size of every family allotment unit is 20 m x 20 m = 400 m² with eight (8) beds planted to vegetables belonging to different botanical families (cucurbits, solanaceous crops, legumes, leafy vegetables, etc.). A pilot barangay allotment garden consists of eight individual allotment units, having a net overall area of 3,200 m² and a gross over-all area of 4,000 m². The area is fenced, with entrance, tool shed, nursery and water supply. Surrounding areas can be planted with border crops.

One important aspect of the allotment garden is the compost heap for the biodegradable household wastes. The compost heap thus links the allotment garden with the integrated solid waste management program of the pilot community. Since more than 50 % of the household wastes in Cagayan de Oro are biodegradable (SCHNITZLER & HOLMER, 2002), its conversion into compost and safe application in the allotment garden significantly reduces the residual waste to be dumped at the controlled city landfill.

5 Results

The main results after 18 months of project implementation are:

- Allotment garden sites in all four pilot areas were selected and corresponding memoranda of agreement signed between all stakeholders
- Allotment gardens in Bugo, Gusa and Canitoan are established, the one in Lapasan is ongoing
- The recruitment of beneficiaries is completed in all areas except in Bugo where the allotment gardeners will be reorganized in such a way that all sectors of the community are represented.
- Several trainings of allotment gardeners were conducted with weekly follow-up visits at the allotment garden site by the project assistants
- Continuous activity monitoring and evaluation is done to enhance the beneficiaries' understanding of the project. This active interaction with the community increased the mutual trust between the beneficiaries and the technical personnel.
- Formation and registration of the Philippine Allotment Gardeners Association (PAGA) with corresponding constitution and by-laws was completed in December 2002.

As regards the cost of establishing one pilot allotment garden, the project spent approximately 337,640.00 PhP (6,400.00 US \$). This includes human resources, capital outlay, consumables, trainings and overhead costs.

Table 1: Cost for establishment of one allotment garden in Cagayan de Oro (Perspective of funding agency)

Item	Usage/Amort.	Unit	No. of units	Unit rate (in PhP)	Costs (in PhP)	Costs (in USD)
1. Human resources						
1a Agronomist for supervision	2 gardens	per month	12	5000.00	60,000.00	1,132.08
2. Captial outlay						
2a Land preparation	12 months	per month	1	5000.00	5,000.00	94.34
2b Land rental	12 months	per month	12	500.00	6,000.00	113.21
2c Water pump	60 months	per piece	1	12000.00	12,000.00	226.42
2d Bucket drip irrigation set	60 months	per unit	8	11000.00	88,000.00	1,660.38
2e Tools	60 months	per set	1	18000.00	18,000.00	339.62
2f Wheelborrow	60 months	per piece	1	3000.00	3,000.00	56.60
2g Toolshed and Nursery	60 months	per piece	1	15000.00	15,000.00	283.02
2h Fence for allotment garden	60 months	per piece	1	13000.00	13,000.00	245.28
3. Consumables						
3a Agricultural inputs (seeds, etc.)		per month	12	2800.00	33,600.00	633.96
3b Gasoline		per month	12	1000.00	12,000.00	226.42
4. Others						
4a Training for allotment gardeners		per training	2	10000.00	20,000.00	377.36
4b IEC materials		per month	4	2000.00	8,000.00	150.94
5. Total direct costs (1-4)					293,600.00	5,539.62
6. Overhead (15 % of 11)		per month			44,040.00	830.94
7. Total costs (5+6)					337,640.00	6,370.57

Size: 3200 m², used by 8 families tilling 400 m² each, Investment costs for 1 year

The beneficiaries received all project assistance as a grant fund channeled through the association. Except for the area in Gusa, the landowner also did not request any rental fees for the land. The only counterpart that is expected from the beneficiaries is the labor to maintain the allotment garden. The beneficiaries are, however, expected to contribute certain payments to the association to make the project sustainable, i.e. to avail of the necessary resources to add new members and to replace damaged tools and other equipment. Following **table 2** shows the suggested payments of each member to the association:

Table 2: Suggested monthly payment of one allotment gardener to the association

Item	Amortization (months)	Unit	No. of units	Unit rate (in PhP)	Costs (in PhP)	Costs (in USD)
2. Capital outlay						
2a Land preparation	12	per month	12	52.08	625.00	11.79
2b Land rental	12	per month	12	62.50	750.00	14.15
2c Water pump	60	per month	12	25.00	300.00	5.66
2d Bucket drip irrigation set	60	per month	12	22.92	275.00	5.19
2e Tools	60	per month	12	37.50	450.00	8.49
2f Wheelbarrow	60	per month	12	6.25	75.00	1.42
2g Toolshed and Nursery	60	per month	12	31.25	375.00	7.08
2h Fence for allotment garden	60	per month	12	27.08	325.00	6.13
3. Consumables						
3a Agricultural inputs (seeds, etc.)		per month	12	350.00	4,200.00	79.25
3b Gasoline		per month	12	125.00	1,500.00	28.30
7. Total costs (3+2)		per month	12	739.58	8,875.00	167.45

Size: 400 m² per one family

6 Discussion

A first evaluation of the project results show that

- The pilot allotment gardens established enabled urban poor of Cagayan de Oro to have legal access to vacant land in the city for agricultural purposes.
- The private landowners who participated in the project are so convinced about the concept that they offered already other areas in Cagayan de Oro to be used for allotment gardening. The overall area offered totals to 5 ha of open land. Landowners from other cities in Mindanao who visited the project sites expressed interest to introduce the concept in their areas. The landowners were particularly convinced that their areas will not longer be idle but productive and that their property is secured from illegal squatting which is conceived as a constant threat for open spaces.
- The allotment garden is essential for a successful solid waste management program in the area. The residual waste of the 150 pilot households to be brought to the landfill area could be reduced to 33 %. 55 % of the household wastes are biodegradable and went to the compost heap in the allotment garden while further 12 % are recyclables and marketed by a garbage picker's organization.
- The project gets full support of the local government units. A city ordinance on the use of vacant lots in the city is in preparation to further promote allotment gardening (i.e tax incentives for landowners that make land available for urban agriculture; requirement to allocate space for allotment gardening in residential areas such as subdivisions)

Not everything went smoothly, though. Among the constraints encountered were the following

- Different perceptions between community and project had to be settled (what technologies to use, how will the project money be spent, misconceptions regarding roles and responsibilities)
- The organization of the allotment garden beneficiaries in Bugo proved to be problematic. It was overlooked that the community in the pilot area consists of two major fractions that are hostile towards each other. In the beginning, only members of one fraction were

represented among the allotment garden beneficiaries not allowing members of the other fraction to join. As a result, the allotment garden project was identified by the community as a project of the fraction leader but not of the city government and its partners and, hence, did not get the full support. In the meantime, the problem was addressed in such a way that the barangay is now involved in the re-organization of the beneficiaries assuring that members of all fractions are equally represented.

- Also in the other allotment garden groups certain internal dynamics had to be considered. However, those were already settled. A good social preparation and mutual understanding of the project objectives among all stakeholders is thus a necessity for success.
- Certain fears and objections within the community had to be overcome. Residents were particularly worried that the compost heap in the allotment garden may be odorous. However, the compost heaps established so far are properly maintained and thus not offensive to the neighboring community.
- A certain level of “dole-out” mentality is still wide-spread among beneficiaries. So far no rental payments were submitted to the association.

Based on the experiences of setting up the first allotment gardens in Cagayan de Oro, the following recommendations are given:

- Further advocate and promote project objectives to private landowners, local government officials and the public in general to extend allotment gardening to other areas of the city
- Include value formation in training programs to strengthen the allotment gardeners association
- Consult the city council on strategies on how to ensure long-term tenure of the allotment gardens (i.e. proposal to purchase land from private landowners)
- More research is needed particularly on integrated pest management strategies to reduce dependence on chemical pesticides

Bibliography

CROUCH, D. 2000. *Reinventing allotments for the twenty-first century: the UK experience*. *Acta Hort.* (ISHS) 523:135-142. http://www.actahort.org/books/523/523_18.htm

DRESCHER, A. W., 2001. *The transferability of the German allotment system to the Southern African Situation*. Proceedings of the Expert Meeting on Urban and peri-urban horticulture in Southern Africa, Stellenbosch, January 2001.

GRÖNING, G., WOLSCHKE-BULMAHN, J., 1995. *Von Ackermann bis Ziegelhütte. Ein Jahrhundert Kleingartenkultur in Frankfurt am Main*. Studien zur Frankfurter Geschichte. and 36, Frankfurt am Main, Germany.

HOLMER, R.J., 2000. *The Periurban Vegetable Project of Xavier University College of Agriculture*. Paper presented at the 12th NOMCARRD Regional Symposium on R&D Highlights, Mindanao Polytechnic State College, Cagayan de Oro City, Philippines, August 10-11, 2000.
www.puvep.com/puvep-paper.pdf

KASCH, G., 2001. *Deutsches Kleingärtnermuseum in Leipzig: Deutschlands Kleingärtner vom 19. zum 21. Jahrhundert*. Band 4, Sächsische Landesstelle für Museumswesen, Chemnitz, Germany.

MACNAIR, E., 2002. *The Garden City Handbook: How to Create and Protect Community Gardens in Greater Victoria*. Polis Project on Ecological Governance. University of Victoria, Victoria BC, Canada

SCHNITZLER, W.H. HOLMER, R.J., 2002. *Prospective Issues and Challenges of Urban Fringe Agriculture*. Report of the APO Seminar on Urban Fringe Agriculture held in Tokyo from 17 to 24 May 2000. Asian Productivity Organization, 2002, S. 53-63.

Acknowledgement

This document has been produced with the financial assistance of the European Community through its AsiaUrbs Program (project PHL-3-17). The views expressed herein are those of project partners and can therefore in no way be taken to reflect the official opinion of the European Commission. The authors want to express their gratitude to all project partners in the Philippines and in Europe for the assistance rendered. Special thanks go to the Kleingartenmuseum (Allotment Garden Museum) in Leipzig, Germany.