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# Financing urban agriculture

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**ABSTRACT** For most small urban farmers, the lack of access to financing is a major bottleneck in their capacity to maintain and expand their activities, and more generally in the potential for scaling up affordable food production in cities. This paper reports on action research undertaken by local teams in 17 cities of different size in Latin America, Asia and Africa. In each city, the teams examined how urban farmers are financing their activities along the value chain, essentially with their own resources, what the gaps are between their needs and the existing practices of public and private institutions with regard to finance, and what mechanisms and innovations can help to close this gap. Financing is defined here as a complex, dynamic combination of resource mobilization, both monetary and non-monetary, plus savings, subsidies and credits.

**KEYWORDS** financing / grassroots / innovations / local development / urban and peri-urban agriculture / urban poverty

## I. INTRODUCTION

Urban agriculture requires both financial and political legitimacy to increase its contribution to feeding cities. While there is increased political support, financial support for urban producers remains quite limited. Most urban producers lack access to credit and investment schemes and develop their activities with limited resources. From 2008 to 2010, local teams from 17 cities in Latin America, Asia and Africa carried out action research, coordinated by the RUAF Foundation,<sup>(1)</sup> on financing small-scale urban and peri-urban agriculture. This paper summarizes the findings from a comparative analysis of the 17 cities.

The rationale for the research comes from the experience of RUAF city partners, who highlight the importance of access to credit and subsidies for urban farmers in the use of the land as a productive resource. The reality showed that for most small urban producers this access is still limited. There is little information, however, on their demand for credit and finance or their repayment capacity. Most international donors and specialized financing institutions still do not consider urban agriculture as a substantive issue; and for most national governments urban agriculture is subsumed within rural agriculture programmes.

The research examined three issues:

- the practices of public and private institutions that finance, or could possibly finance, urban agriculture;
- the needs and demands for finance of urban poor engaged in urban agriculture, agro-processing or marketing; and

- the gap between existing and potential financial resources (the offer side) and the needs and demands of small-scale urban farmers (the demand side).

## II. BACKGROUND

The study cities were selected essentially because of their urban agriculture activities and because they had working relationships with RUAF. However, the importance of urban agriculture in economic and financial terms varies greatly between them, as do the types of financial mechanisms available.

Most of the cities have a population of more than one million inhabitants (Bulawayo, Accra, Ibadan, Amman, Sana'a, Cape Town, Belo Horizonte and Freetown) and four are megacities (Bogotá, Lima, Shanghai and Beijing). There is one small municipality – Magadi, at the periphery of Bangalore – and the remaining four cities have between 500,000 and one million inhabitants (Ndola, Bobo Dioulasso, Porto Novo and Gampaha).

Most of the cities are either national capitals (Accra, Amman, Sana'a, Porto Novo, Bogotá, Lima, Freetown, Beijing) or regional capitals (Ibadan, Bulawayo, Ndola, Cape Town, Bobo Dioulasso, Belo Horizonte and Gampaha). Some sites, including Shanghai (Minhang), Beijing (Huairou, Tangzhou) and Magadi were chosen for being positioned at the periphery of large metropolises, offering a more peri-urban perspective (Figure 1). An earlier UN-Habitat/UMP/RUAF study on urban agriculture finance took place in 13 cities, which are also shown in Figure 1.

For the purposes of this research, the concept of financing was not limited to microcredit or credits delivered by banks and microfinance institutions (MFIs), as is the case in most of the scarce existing literature. Financing is considered here as a highly complex and dynamic combination of resource mobilization, both monetary and non-monetary + savings + subsidies + credits. A central argument here is that this equation needs to serve as a basis for any consolidation of the financing system for urban agriculture. Approaches focusing only on credit usually show their limitations and are useful for a small sub-set of producers.

All the studies refer to quite different urban agriculture practices, but each one illustrates Mougeot's definition:

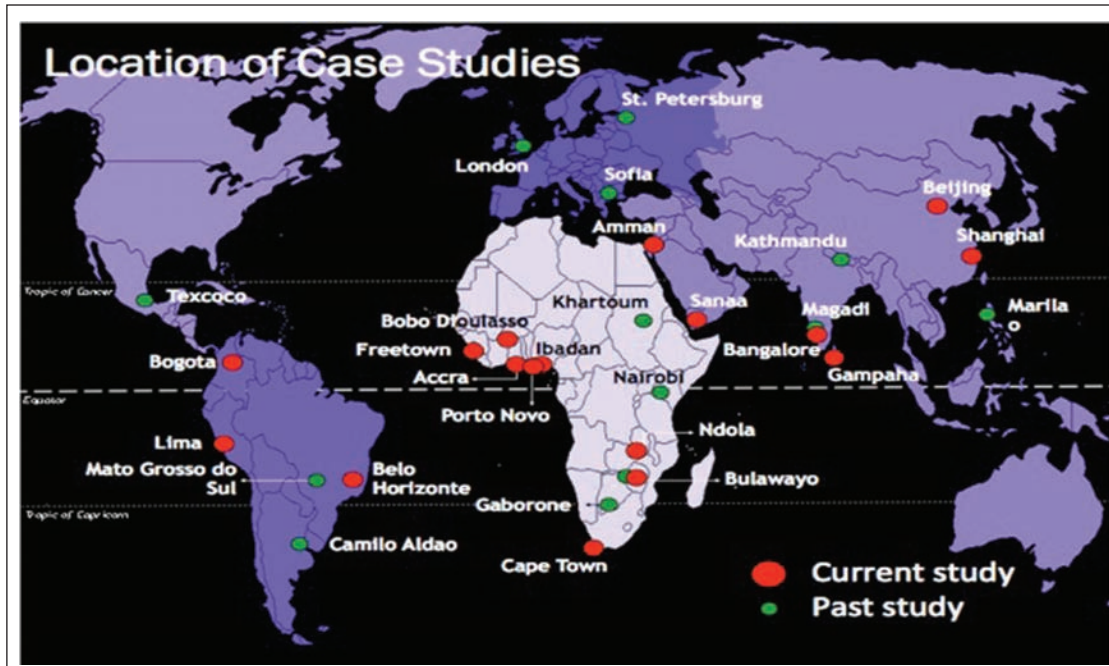
"Urban agriculture is an industry located within, or on the fringe of a town, a city or a metropolis, which grows and raises, processes and distributes a diversity of food and non-food products, re-(using) largely human and material resources, products and services found in and around that urban area, and in turn supplying human and material resources, products and services largely to that urban area."<sup>(2)</sup>

Urban agriculture activities in the 17 cities include the growing of fruit and vegetables, herbs and medicinal plants, mushrooms, flowers and ornamental plants; and the raising of livestock and small ruminants, fish, poultry and silk worms. This extreme variety limits the scope of the study, as financial practices of both institutions and farmers are specific to each commodity and each value chain. This is a finding per se, but at the same time, it makes it more difficult to draw general conclusions.

**This paper is the result of an analysis carried out with Marielle Dubbeling, RUAF Global Coordinator of the From Seed to Table programme. The findings were presented at the Almere RUAF international meeting in May 2011 and participants' comments are included. A summary of this paper was prepared for RUAF Magazine No 25 and benefited from comments by Marielle Dubbeling and René Veenhuizen. We would like to thank each of the authors of the 17 case studies for their contributions and goodwill.**

1. The RUAF Foundation is an international network of resource centres on urban agriculture and food security; see [www.ruaf.org](http://www.ruaf.org).

2. Mougeot, L (editor) (2005), *Agropolis. The Social, Political and Environmental Dimensions of Urban Agriculture*, Earthscan, London, page 2.



**FIGURE 1**  
Location of case studies

SOURCE: Yves Cabannes, RUAF research (2010).

### a. Variations in importance of urban and peri-urban agriculture

The importance of urban and peri-urban agriculture varies significantly among the cities that participated in the research and this also limits generalization. In some cities, such as Bobo Dioulasso (a regional capital in Burkina Faso), agriculture plays an important role in the city economy. The same is true for Ibadan in Nigeria, where urban agriculture is a dominant activity in its peri-urban area. Minhang district (Shanghai) and Huairou and Tongzhou districts (Beijing) have a significant agro-population involved primarily in commercial agriculture. The extreme case in this first category of cities is Bulawayo (Zimbabwe), where more than 90 per cent of the population are involved in urban agriculture either as a subsistence or commercial activity or both.<sup>(3)</sup>

In Freetown (Sierra Leone) and Porto Novo (Benin), urban agriculture plays a less important role but covers a wide range of activities, for example production, livestock, fish culture and agro-processing in Porto Novo<sup>(4)</sup> Another category includes those cities where urban agriculture only contributes a little to livelihoods and the local economy as, for instance, in Amman (Jordan) or Greater Sana'a municipality (Yemen).

### b. Method

The study was conducted by local teams involved in urban agriculture and consultants with expertise in financing. Guidelines for the fieldwork were

3. Magadza, S N, S Chimhenga, L Hadebe, J Mpofu, P Nkala and P Sibanda (2010), "Local finance for small-scale urban and peri-urban agricultural producers in Bulawayo (Zimbabwe)", RUAF Foundation, Leusden, the Netherlands, page 7.

4. Glele, Eugène K A (2009), "Accès au crédit et financement de l'agriculture urbaine et péri-urbaine à Porto Novo (Benin)", RUAF Foundation, Leusden, the Netherlands, page 13.

designed and shared among the various teams, drawing from previous local practices. Each local study followed the same steps:

- collection of primary and secondary data;
- interviews with key actors;
- creation of profiles of institutions involved in finance, primarily dealing with urban agriculture;
- focus groups with existing urban farmers organizations;
- design and testing with potential local partners of some practical financial system; and
- feedback workshop for the institutions and communities interviewed.

Each local team built its own questionnaires and developed its own guidelines for interviews and focus groups. Each draft report followed a similar format, and included diagnosis and analysis of the findings as well as legal and policy recommendations for a more enabling environment for loan takers, and institutional and organizational development recommendations, including capacity-building strategies. A systematic review of the first drafts was conducted by the same two persons at RUAF. All teams then gathered at an international workshop prior to preparing their second drafts, in order to identify difficulties, harmonize methods and extract preliminary conclusions and common lessons learned.

Most reports were produced in English, French, Portuguese or Spanish, and the comparative analysis was carried out in English by this author, who is fluent in all four. Arabic and Chinese reports were partially translated into English. Such multi-language research brings some limitations, primarily regarding various local financial concepts that have no direct translation and have to be understood in their local environment. This is the case, for instance, with Islamic banking and rules.

### **c. Limits of the study and of the comparative analysis**

Despite the significant number of cities that participated, the sample is far from representative of the range of urban agriculture experience. The research did not, for instance, consider places such as Rosario in Argentina, Havana and Cienfuegos in Cuba or Vancouver in Canada, where urban agriculture has been scaling up to a considerable level in feeding its citizens. A second limitation of the comparative analysis is that despite a common method and objectives, comparable and homogeneous data could not always be obtained. For example, the multi-language aspect has its limitations, as noted above.

Despite every effort to create a common base while allowing the freedom to capture and identify local specificities and innovations, it has been quite difficult to get systematic information for all 17 cases that could be translated into graphs or tables to provide a comprehensive overview. Although each study is grounded in quantitative evidence, the research as a whole remains essentially exploratory and qualitative. This explains why this paper focuses on narratives that highlight and illustrate key issues shared by more than one case study.

The lessons learned from the study are divided into two parts. The first, based on the practices of public and private financing institutions, deals essentially with credits and subsidies; the second deals with the practices of small-scale urban farmers around resource mobilization and savings. For each of the key findings, a short narrative on one or

two of the participating city experiences is presented as an illustration. They represent only the tip of the iceberg, and more comprehensive information can be found in each of the research reports (see Appendix 1 for a full list of the reports and how to access them).

### III. LESSONS LEARNED FROM THE PRACTICES OF FINANCIAL INSTITUTIONS

#### a. Credits and loans do exist in most cities, sometimes in a dense network

The significant level of loans for urban agriculture in some of the 17 cities does not mean that they represent an important share of the overall amount or number of loans in these same cities. On the contrary. A clear finding is that loans to urban agriculture in its wider sense form quite a limited share of the total volume of credits provided by commercial banks or microfinance institutions. Systematic interviews with representatives of most of these institutions in the various cities reveal that they could lend far more than they do today. Accra, Bobo Dioulasso, Bogotá, Amman and Freetown are examples of cities with available resources for loans and a relatively well-organized financial sector.

As part of the study in Accra, secondary information was collected from reports of the Bank of Ghana, ARB APEX Bank, Credit Union of Ghana, Ghana Micro-Finance Network (GHAMFIN), Association of Financial NGOs (ASFIN) and the Statistical Research and Information Directorate of the Ministry of Food and Agriculture. Primary data were obtained from members of urban producers associations and representatives of savings and loans companies, community cooperative credit unions, rural/community bank branches, as well as conventional commercial and development banks. Representatives of state-owned financing projects, such as the Micro and Small Loan Scheme Centre (MASLOC), SPEED and social investment funds (of the districts) were interviewed regarding the requirements for accessing, and the sustainability of, the facilities.<sup>(5)</sup> In all, 200 financial institutions and formal and informal finance schemes were identified in the urban and peri-urban Greater Accra Metropolitan Area. The Ghana microfinance institutions network alone (GHAMFIN) numbers 70 regulated and non-regulated microcredit institutions. A key conclusion in Accra, common to most of the participating cities, is that most financial institutions do not have special products for agricultural activities.<sup>(6)</sup> Only three institutions here had such clearly identified financial products.

#### b. Credits to urban agriculture do exist, even if they are limited in number and scope

Based on the earlier UN–Habitat/UMP/RUAF study on urban agriculture finance,<sup>(7)</sup> the initial assumption was that credits for urban agriculture were the exception rather than the rule. But the fact is that microcredits for small-scale urban farmers do exist in various cities even if they are generally limited in scope and in number. They are more frequent for commercially oriented activities such as raising animals, agro-processing or marketing and much less available for vegetable crops. These loans are relatively common in cities such as Lima, Ibadan or Amman.

5. Egyir, Irene S (2010), "Applied study on local finance for poor urban and peri-urban producers in Accra (Ghana)", RUAF Foundation, Leusden, the Netherlands, page 10.

6. See reference 5, page 14.

7. Cabannes, Yves (2006), "Financing and investment for urban agriculture", Chapter 4 (including case studies) in René van Veenhuizen (editor), *Cities Farming for the Future, Urban Agriculture for Green and Productive Cities*, RUAF Foundation, Leusden, the Netherlands, pages 87–123.

In three settlements in Amman,<sup>(8)</sup> the survey showed that on average 23 per cent of the respondents got loans: 75 per cent in one settlement, 15 per cent in the second and 11 per cent in the third. The loans were provided for planting fruit trees, goat breeding and purchasing water tanks. They varied in value from JD 300 (US\$ 420) to JD 20,000 (US\$ 28,000), with the largest given for planting trees. The main source of credit for these farmers was the Agricultural Credit Corporation (ACC).

In Lima (Peru), 53 pig raisers were surveyed. They belonged to AGROSILVES, an association of 29 pig producer units with 300 members in total, active in Villa en Salvador and Villa Maria del Triunfo, two populous low-income districts on the outskirts of Metropolitan Lima.<sup>(9)</sup> At the time of the survey, 57 per cent of respondents had outstanding loans, most of them disbursed by two financial institutions, although many had loans with additional MFIs as well.<sup>(10)</sup> The rate of default was low.

These are only two examples among many. These experiences have reached a critical mass that deserves further research and understanding.

### c. Most credits institutions are reluctant to give loans to urban farmers

Most credit institutions are reluctant to give loans to urban farmers for a long list of (good and bad) reasons and perceptions. Evidence from two cities gives a sense of this multiplicity of reasons.

The survey in Gampaha (Sri Lanka) is particularly interesting because it considered a wide sample of 22 financial institutions, only 10 of which were currently involved in agricultural ventures, although not necessarily in urban areas. Of the many perceived or practical bottlenecks, the main ones listed below reflect the results of many studies:<sup>(11)</sup>

- lack of awareness of urban agriculture (or limited awareness);
- a perception that financing agriculture, especially small scale, is “risky”;
- concern about farmers’ behaviour regarding repayments;
- perception that urban agriculture is small and unprofitable or does not match the current strategic objectives of the institution;
- lack of potential entities to partner with;
- the inflexibility of rules and regulations around standard financial products;
- a tendency to target only large-scale commercial enterprises, mainly those in the processing sector;
- a limitation of agricultural loans to rural areas;
- concerns about independence and administrative costs; and
- economic recession or financial crises creating a risk-averse attitude.

Another finding from the Gampaha study is that the reluctance by institutions to provide loans to urban farmers co-exists with a “...positive attitude and or sympathy towards agricultural communities and activities.”<sup>(12)</sup>

The survey in Ndola, a city of 775,000 inhabitants within the Zambian copper belt, highlights similar bottlenecks and adds a few more:

- difficulties in mobilizing capital to finance potentially risky areas such as urban agriculture;
- stringent regulatory requirements in this particular industry, e.g. minimum reserve requirements by the Bank of Zambia;

8. Samir El-Habbab, Mohammad (2010), “Local finance for poor urban and peri-urban producers, Amman (Jordan)”, RUAF Foundation, Leusden, the Netherlands, page 17.

9. Sáenz H, Ernesto (2010), “Estudio: mejorando el acceso a capital de los agricultores urbanos. Estudio aplicado de finanzas locales para agricultores urbanos y peri urbanos en condición de pobreza, Lima (Peru)”, RUAF Foundation, Leusden, the Netherlands, 6 pages.

10. See reference 9, page 10.

11. Jayasinghe-Mugalide, Udith (2009), “Study on local finance for urban and peri-urban producers – Gampaha (Sri Lanka)” (final version), RUAF Foundation, Leusden, the Netherlands, pages 26 and 27.

12. See reference 11 (draft version), page 10.

- difficulties in executing recovery;
- lack of viable projects by poor urban farmers to qualify for borrowing;
- lack of proper record keeping by poor urban farmers;
- lack of any clear-cut government policy regarding lending to farmers;
- inadequate financial knowledge and discipline by poor urban farmers;
- risk inherent in agricultural activities (seasonality of the activity; this applies mainly to rainfall-dependent farmers);
- failure of most poor urban agricultural producers to meet the requirements set by the institution;
- limited knowledge of farmers and lack of experience, hence poor farming practices;
- different expectations of the client and the institution; clients are sometimes over-expectant of the institution, hence conflict arises;
- high default rates by farmers;
- misappropriation of funds by farmers; and
- harsh economic conditions causing financial institutions to be more risk averse.<sup>(13)</sup>

13. Phiri, Obby Y Z (2009), "Applied study on local finance for poor urban and peri-urban producers, Ndola (Zambia)", RUAF Foundation, Leusden, the Netherlands, pages 26 and 27.

An interesting finding is the perception of risk by financial institutions as the main argument to justify why they are disinclined to offer financial products to urban farmers. This might be linked to fears of crop failure for climatic reasons (drought in arid zones or floods that wash away fish culture ponds, as happened in Porto Novo for instance). The expectation of climate change effects does not help change this perception.

Other perceived risks are more financial in nature and refer to the supposedly high rates of loan defaults; also the difficulties in recovering arrears. Interestingly, there is no strong evidence in the data from the case studies to suggest a higher rate of defaults in loans to urban agriculture. Additional research would probably be required in order to come to any final conclusions. The current financial crisis also leads financial institutions to be even more cautious than before. Various municipalities have come up with innovative approaches, such as guarantee and insurance mechanisms, which will be described later in this paper.

When widening the analysis beyond the cases of Gampaha and Ndola, the main reasons for a reluctance to lend to urban farming activities can be summarized as follows:

- perception of high risks associated with the sector;
- lack of proper land title deeds and/or collateral;
- rigidity and/or limitations of national regulations and policies;
- lack of information and awareness of urban and peri-urban agriculture (in its wider sense of production, agro-processing and marketing) as an economic sector;
- lack of confidence in urban farmers, based more on limited communication than for objective reasons; and
- limited financial management capacities of farmers.

#### **d. Central and local governments play an active financial role in various cities**

Comparative analysis suggests that central and local governments play a major role in the success or failure of city level financing systems for urban agriculture. One central finding is the creative range of ways in which



local governments are using their limited or scarce resources. In some cities, they play a role in setting up public finance strategies covering a wide range of financial interventions that complement the banking and micro-finance system. In the majority of cases, their primary role is to provide subsidies through a varied and creative set of mechanisms. These findings complement those of the earlier research previously referred to.<sup>(14)</sup>

Some cities offer quite a broad range of services and support to poor urban farmers. In Freetown (Sierra Leone), the Ministry of Agriculture, Forestry and Food Security (MAFFS) provides technical assistance and grants to producer groups,<sup>(15)</sup> and the Rural and Private Support programme provides resources to agro-processing and marketing projects. In Sana'a (Yemen),<sup>(16)</sup> the Agricultural Production Promotion Fund provides full grants and also subsidies to urban farmers to cover half the interest rate they pay on loans, demonstrating the links that can exist between the public sector and the banking sector. The Chinese experience in Minhang district (Shanghai) shows large subsidies channelled to equipment and infrastructure, as well as production and agro-processing-related activities.<sup>(17)</sup>

The case of Cape Town (South Africa) – despite some difficulties identified in the study – is an example of the range of services that might be provided by a city. Here, the Comprehensive Agricultural Support Programme (CASP), part of the Cape Town agricultural policy since 2007, has an annual budget of approximately US\$ 74,000 (Rand 500,000). The necessary requirements in order to benefit are access to land, South African citizenship, the practice of vegetable or livestock farming and contributions to the community.

The programme provides tools and small equipment such as wheelbarrows, rakes and spades, as well as seeds, seedlings, fertilizers, compost and pesticides. Farmers also receive capacity building and skills development in areas such as business administration and marketing, and advice on irrigation systems. A limitation to the technical assistance is that it can take six months or more to process requests for help. On the positive side, the city has a quarterly monitoring and evaluation process that measures the progress of the farmers. Those with demonstrated ability to farm can apply for a second round of assistance. So far, land availability has proven to be the single largest impediment for the development and growth of poor urban and peri-urban farming in the city.

Findings from the various cities lead to the following conclusion, namely that public subsidies have been channelled into each step of the value chain:

- inputs (land, water, seeds, seedlings, fertilizers, small equipment or tools);
- production itself (technical support, organization of producers, zero grazing cattle breeding, health control for animals);
- agro-processing (supply of equipment, cost sharing of interest rates, training); and
- distribution (provision of spaces for urban agriculture fairs, national awards, collective buying for schools and other institutions, public restaurants supplied with organic urban-produced commodities).

The wealth of finance solutions experimented with since the earlier research is impressive. A systematic capitalization of these experiences would be of great value.

14. See reference 7, section on subsidies.

15. Konneh, Pamela (2010), "Applied study of credit and financing opportunities for farmers in urban and peri-urban Freetown (Sierra Leone)", COOPI Internationale and RUAF Foundation, Leusden, the Netherlands, page 33.

16. Al Jundi, Rasha (2010), "Applied study on local finance and credit for poor urban and peri-urban producers, Sana'a (Yemen)", RUAF Foundation, Leusden, Holland, 54 pages.

17. Yin Zheng, Liu Ming and Cai Jianming, (2010), "Urban agricultural financing in Minhang district, Shanghai (China)", RUAF Foundation Report, Leusden, the Netherlands, pages 1–6.

### e. Credit and subsidies to increase productivity

Credits and subsidies to increase productivity deserve greater attention. Innovative practices in this area were identified in four cities as varied as Amman, Bobo-Dioulasso and Huairou and Tongzhou districts (Beijing). China is probably the country where most financial resources have been made available for a broad set of incentives in cities such as Shanghai or Beijing:

- Registration and certification: *“Local governments will provide 100 per cent subsidy for agricultural enterprises registering agricultural product brand or achieving agricultural product standard certification. Moreover, local governments will give some reward to those agricultural enterprises that passed the standard certification of high quality agricultural products.”*<sup>(18)</sup>
- Improvement of varieties: *“Local governments provide rice seed for free and vegetable seed that is used for municipal level demonstration and extension, with 50 per cent subsidy of the price of seed.”*<sup>(19)</sup> These subsidies for high quality crops are also part of the subsidy system for Huairou and Tongzhou districts in Beijing, where the average subsidy for corn and wheat is 10 Yuan per mu.<sup>(20)</sup>
- Mechanization of production: Again, thanks to Shanghai municipality, *“...Minhang district will provide a matching subsidy for updating and purchasing agricultural machine[ry], and the subsidy of agricultural machine[ry] for grain crop[s], vegetable[s] and forestry are respectively 70 per cent, 60 per cent and 50 per cent of original price.”*<sup>(21)</sup>

The mission of the Solidarity Regional Bank (BRS)<sup>(22)</sup> in Burkina Faso is to fight against poverty and unemployment through supporting self-employment and microenterprises. It covers most sectors of activity and is directed at a broad public, including microentrepreneurs, apprentices who have recently completed their skills training, workers, (urban) farmers, cattle raisers, cooperatives of fishermen and craftsmen, and school dropouts. They offer most of the financial products offered by banks and MFIs, primarily 3–5 year investment credits and short-term credits for cash flow.<sup>(23)</sup> Bank decision makers are betting that urban agriculture will increase productivity through *perimètres irrigués* (irrigated perimeters), which is practiced extensively around Bobo Dioulasso for cotton farming. Support for small-scale irrigation activities makes good financial sense.

One conclusion of the study is that financing productivity could be better developed in the future and would most probably receive positive attention from public sources as well as the banking and microfinance sectors.

## IV. URBAN FARMERS’ FINANCING PRACTICES

### a. Most poor urban farmers are “outside the institutional landscape” and they self-finance their economic activities

A key finding is that most poor urban farmers stand outside the formal institutional landscape and finance their activities through a rich array of solutions common to a number of the sites:

18. See reference 17, page 3.

19. See reference 17, page 3.

20. Jianming, Cai and Guo Hua (2010), “Financing for urban agriculture in Tongzhou and Huairou district, Beijing (China)”, RUAF Foundation Report, Leusden, the Netherlands, page 6.

21. See reference 17, page 2.

22. BRS: Banque Régionale Solidaire.

23. Translation from French and adaptation by the author from the Bobo Dioulasso case study: Ouattara, Hyacinthe (2009), “Etude sur l’accès au crédit et le financement de l’agriculture urbaine et périurbaine à Bobo Dioulasso (Burkina Faso)”, RUAF Foundation, Leusden, the Netherlands, 61 pages.

- loans from family and friends or (less commonly) from remittances sent by members of the family working abroad;
- rotating savings systems – called *tontines* in Porto Novo, *osusu* in Ibadan, *susu* in Accra, group savings in Bulawayo or *banquitos* in Lima – all share basic principles, with some local variations, for example small groups or voluntary adhesion or each member receiving in rotation the sums saved on a weekly, fortnightly or monthly basis;
- cross-subsidies from one product that is highly valued at a specific time (for example raising and selling goats in the case of Sana'a), which allows for risk on less profitable or risky products. This recalls the quite resilient and traditional poly-cultivation and animal raising (*polyculture/élevage* in French) of family-based rural farming systems;
- informal credits from input suppliers of seeds, pesticides or fertilizers, who accept payment once the products are sold; and
- non-institutional local moneylenders.

Two illustrative cases give a sense of the variety of solutions. Magadi<sup>(24)</sup> is a small (population 28,000) rapidly growing city located at the periphery of Bangalore (India), and its major livelihood is rural and peri-urban agriculture (primarily silk processing, dairy and livestock, rice mills, vegetables and flowers). For this study, interviews were carried out with 50 urban farmers from Magadi Carrot Growers Association (MCGA), 50 other farmers who did not belong to the association and a further 21 farmers from a village 20 kilometres away from the city. The survey indicated that virtually no loans had been taken from formal banks; 13 of the 50 organized farmers had borrowed from MCGA; and 69 per cent of the total sample had borrowed money from local moneylenders. A large proportion had pledged their jewellery in order to get these loans, which were used for agricultural activities, silk reeling and irrigation, as well as for marriages, housing maintenance and family needs. The Magadi case study presents the pros and cons of non-institutional borrowing, which is important to take into account. The negative aspects that were identified included high and even usurious interest rates, punitive responses to defaults and demands for lump sum repayments. On the positive side, loans were available when needed without the requirement for any formal documentation, and transaction costs were low.

In the case of Accra (Ghana),<sup>(25)</sup> only five per cent of respondents had received credit from formal financial institutions (the same number had savings accounts, although they reported not being regular contributors). Five per cent had financed their activities through remittances from family members working abroad, which is surprisingly low, and was mostly absent in the other cities. However, its role could increase in the future. Informal savings through group-based rotating savings schemes was practiced by 10 per cent of respondents, primarily traders. Most respondents financed their activities through personal savings if they had any, and through “informal credit” sources such as non-institutional lenders and credit from relatives or from input traders, who will be paid for the pesticides or seeds they provide once the crop is sold.

### b. Urban farmers are quite reluctant to ask for loans

Another key finding is that urban farmers in most cities, even when they express a high level of need, are quite reluctant to ask for loans or even subsidies. Various reasons are quite commonly shared and include:

24. Synthesis based on various sections of the Magadi-Bangalore report; see Ramalingegowda, U C, P S Srikanthamurthy, N Nagaraj and M G Chandrakanth (2010), “Credit and financing study, Magadi-Bangalore (India)”, RUAF Foundation, Leusden, the Netherlands 24 pages.

25. See reference 5, extracts and synthesis pages 41–46.

## FINANCING URBAN AGRICULTURE

- available loans are generally not adapted to agricultural and animal-raising cycles: “*The loans to be paid back in one year are not sufficient for livestock*” (Beijing); “*Timing is too short for reimbursement*” (Bobo Dioulasso);
- “*Too much bureaucracy*”...“*The process is onerous*”...“*Lots of paperwork*”...“*No clear procedures*” are opinions from cities as different as Porto Novo, Ndola, Sana’a and Bobo Dioulasso;
- formal land titles, which poor farmers usually do not possess, are required by banks as collateral or guarantees in a large number of cities, including Magadi;
- loans are not small enough; for instance in Bulawayo, urban farmers reported a US\$ 1,000 minimum, beyond their repayment capacities;
- difficulty preparing funding applications;
- insufficient information about credit possibilities and potential subsidies. In Ndola (Zambia) for instance, 90 out of the 110 producers interviewed expressed a “...*lack of knowledge about the financial products offered locally*”<sup>(26)</sup> to explain their difficulties in accessing finance; and
- overly high interests rates, primarily those imposed by MFIs, is a recurrent argument, even if some loan takers accept them for lack of alternatives. For instance, interest rates as high as 60 per cent a year were offered in Accra. Ndola farmers cite interest rates from MFIs of between four and six per cent a month (48 to 72 per cent a year).

26. See reference 13, page 25.

High interest loans proposed by MFIs and conventional banks have had a limited positive impact on improving the situation of poor farmers venturing into more market-oriented activities. In various cities, interest rates are outrageously high, in many cases closer to the usurious rates charged by informal moneylenders and loan sharks than by the conventional banking sector. In Lima, the interest rates proposed by the MFIs to the pig raisers varied between 60 and 80 per cent a year,<sup>(27)</sup> similar to those proposed by FADU in Ibadan (60 per cent). These rates appear indecent and unethical from a human development perspective, and they explain the reluctance of poor urban farmers to engage in loans they sorely need.

27. See reference 9, pages 22–23.

### c. High level of needs

The low level of formal demand does not mean that urban farmers have no need for credit. On the contrary. The study explored the financial requirements of farmers based on the kind of agriculture they practiced. The answers are generally quite defined and concise and seem well adapted to both farming practices and economic capacities. A couple of examples illustrate the accuracy and diversity of their needs.

Urban farmer needs in Belo Horizonte (Brazil), identified through both the 2009 and earlier research,<sup>(28)</sup> fall into three main categories and are significantly in line with findings from most participating cities:

- **requests for infrastructure** to support urban agriculture include multi-use buildings for such things as processing agricultural products, training and group meetings, and with specific requests for toilets and water, which are usually missing; equipment for collecting and storing water (cisterns, pump motors) and improvement or expansion of the irrigation systems; building and expansion of

28. This information was collected by CADEB (Centro de Auto Desenvolvimento do Brasil) in 2009 as part of the From Seed to Table RUA project.

seedling beds or plastic greenhouse tunnels; sheds for marketing the products, to include the necessary infrastructure (weights, boxes, storage); bicycles or carts to transport vegetables to the selling points; furniture and office equipment;

- **requests for urban agriculture inputs**, which include the acquisition of seeds, small equipment, treated water from COPASA (the state water supply company) and manure; and
- **technical support and strengthening of capacities**, which can be divided into production, marketing, management of the gardens (registry, accountability...) and group management, mainly for organization and functioning.<sup>(29)</sup>

The Freetown (Sierra Leone) case study<sup>(30)</sup> focused on the willingness of urban farmers to borrow. Interviews clearly indicate that most urban farmers were interested: *"Out of the total of 269 respondents, 264 expressed a desire to borrow. The fisher folk and long distance marketers also indicated that they needed credit for the expansion of their business."*<sup>(31)</sup>

The Freetown study also highlighted a second important aspect of the demand for credit by poor urban farmers: it varies greatly both in purpose and in value according to the type of agricultural activity (raising animals, fish culture, vegetable farmers) and its location along the value chain (production, agro-processing or marketing):

*"The processors (high and low input), [small-scale pig] producers and ornamental producers require more cash for shed construction and purchasing processing machines, such as cassava graters and grinders, whereas the vegetable producers demand cash for purchasing irrigation machines. The fisher folk require additional cash for preservation facilities (cold store rooms and rehabilitation of processing ovens) and outboard engines. The long distance marketers however, require cash for transportation and storage facilities. The sellers also require additional cash for transport and storage facilities."*<sup>(32)</sup>

Finance needs are similarly specific in most of the cities.

A third lesson learned in Freetown, largely shared by other cities, refers to when and for how long are loans necessary, which again depends on the type of activity:

*"The vegetable producers and sellers require credit and finance mostly during the first cropping season, which is the dry season when most vegetable planting takes place and there is demand for inputs, more capital for labour and trading. The small-scale pig producers and ornamental producers require credit all year round since their activities are not time specific. The low and high input processors do not have any specific time in which they require credit. Credit is required at any time for continuous operations."*<sup>(33)</sup>

The very limited capacity of most banking and MFI institutions to deliver credits at the right time of the year is in some cases identified as a major issue and a central reason for farmers' reluctance to take credits.

One contradiction is that these expressed needs are immediate and generally within the existing finance offer, be it public or private. Most loans requested by urban farmers can lead to quite exploitative situations, given very high interest rates. The gains in productivity and

29. Translation from Brazilian Portuguese and adaptation by this author from the Belo Horizonte case study: Daher Borges, Kelen Aparecida and Simião Gomes Leão (2010), "Relatório sobre as demandas e as possíveis fontes de créditos e financiamentos para os agricultores urbanos de Belo Horizonte (Brasil)", RUAF Foundation, Leusden, the Netherlands, page 13.

30. See reference 15.

31. See reference 15, page 53.

32. See reference 15, page 54.

33. See reference 15, page 55.

production might allow farmers to reimburse their loans, and banking institutions to generate profit. It is much more doubtful that prevalent lending conditions and available financial products will allow the urban farmers to consolidate or expand their activities. An immediate question is whether existing MFI and banking systems are not simply perpetuating a culture of poverty.

#### **d. Difficulties in passing from well-identified demands to a "business plan"**

The expressed needs of urban farmers for credit for seeds, equipment, infrastructure or technical assistance are usually clear, but these are difficult to transform into numbers. Despite the recommendations and suggestions provided by each report, most of the demands remained in the realm of ideas and could not be quantified in sound financial terms, except in some cities.

This is a serious handicap for a couple of reasons; first, even if local financial organizations or local governments are willing to authorize loans or give subsidies, requests for unspecified amounts cannot be processed. The lack of proper quantification might also lead to demands beyond the capacity of local government to meet these.

The Bulawayo (Zimbabwe) report summarizes this difficulty and proposes some responses that are applicable to other cities as well:

"Business plans or project proposals are demanded by financial institutions in order to assess whether to award a loan to farmers. Writing a convincing business plan is not an easy exercise and farmers complained that it was beyond their capacity as individuals. Peri-urban farmers in particular bemoaned the financial outlay necessary to employ someone to produce a plan, only to fail to receive funding after its consideration."<sup>(34)</sup>

34. See reference 3, page 47

In order to address this problem, the report recommends on the one hand:

"...that an individual, or group of individuals, under Bulawayo city council or farmer associations like Zimbabwe Commercial Farmers Union, be assigned to assist in producing project proposals on behalf of the farmer(s)."<sup>(35)</sup>

35. See reference 3, page 47

A second proposal is that:

"...workshops be held for farmers wishing to undertake a project with the aim of raising their awareness of the demands of the business plan, so that they could prepare as much evidence and information as possible prior to working on the final plan. These workshops could be held periodically with a number of stakeholders and facilitators from Bulawayo city council, NGOs and financial institutions".<sup>(36)</sup>

36. See reference 3, page 47

An additional difficulty is the disconnect between the level of needs and capacity for repayment by urban farmers. Needs expressed fall

far beyond the income of farmers, producers and, to a lesser extent, of sellers and marketers. These problems are exacerbated for farmers intending to shift from self-consumption to a mix of commercial/self-consumption activities or to the purely commercial. The link between essentially informal activities and a formal financial system seems difficult to bridge. The following section introduces some innovative approaches.

## V. BRIDGING THE GAP BETWEEN LIMITED DEMAND AND RESTRICTED OFFER

### a. Innovative ideas that need to be developed further

In several participating cities, innovative proposals were formulated and some were partially implemented. Their aim is to improve the access of poor urban farmers to finance, understood in the broader sense of the following equation:

“urban agriculture finance = monetary and non-monetary resources mobilization + individual and collective savings + subsidies under different forms + microcredits and conventional loans”

Proposals include:

- local revolving funds for urban farmers with an insurance component (Amman and Sana'a);
- involvement of leasing companies (Ndola), for instance for acquiring tractors or watering canes; the experience in Lusaka with leasing of bicycles proved positive;<sup>(37)</sup>
- mutual savings fund for urban farmers (Bogotá) and support from the Banca Capital municipal programme that would match each peso saved by farmers; and
- introduction of the Islamic law principle of *reba* by some banks, such as Al Amal Bank (Sana'a), to address the prohibitive interest rates practiced by MFIs. Two modalities co-exist: first, *murabaha*, whereby the institution buys the product that is needed by the borrower, who in turn repays the price of the product plus the transaction expenses; and second, *mudarabah*, whereby the institution gives a loan to start up a specific business and claims a percentage of the profit for itself.<sup>(38)</sup>

37. See reference 13, page 30.

38. See reference 16, page 21.

### b. Four major innovations: generating an enabling financial environment

These four innovations, although not financial, have a direct impact as they address the major bottlenecks to financing the consolidation, expansion and scaling up of urban and peri-urban agriculture.

#### i. Formal organizations and confederations

Urban farmers and producers are often not legalized and are considered informal. As a result, they are not eligible for support from most of the formal banking system and public institutions.

Agrosilves, the organization for 300 pig raisers in metropolitan Lima, has successfully attracted the attention of two banking institutions and has negotiated individual loans with a collective approach. The credit institutions benefit by getting a critical mass of clients already “pre-selected” by Agrosilves. One of the most difficult obstacles to obtaining a mortgage is the need for a proper land title to guarantee the loan. This can be by-passed in this case, as Agrosilves supplies a certificate of residence that is accepted as a proxy by the banks (see below for more on tenure).

In Ibadan (Nigeria), urban farmers are locally organized into 21 “commodity associations” under the All Farmers Association of Nigeria, resulting in their increased legitimacy. The specific risks and financial needs of the different producers are identified by the association in terms of loan amounts, possible guarantees and duration of the repayment in relation to the production cycle. Getting organized is welcomed by the urban farmers but also by the public and financial institutions.

## ii. Security of tenure

The lack of formal land titles is a key obstacle to increasing the access of urban farmers to finance. An ongoing experience developed in Freetown (Sierra Leone) is a good example of how to address this bottleneck:

“The Freetown Urban and Peri-urban Agriculture Forum (UPA), involving key political institutions, credit institutions and farmers, designed an innovative financing mechanism in 2010. The new programme relies on authorities for the permanent allocation of valleys, slopes and lowlands for UPA use. Land is allocated to registered and functioning farmer groups for a period of five years for a token rent, provided they abide by the agreement regulations. The groups receive technical training and monitoring and, for farmer groups participating in the scheme, four credit institutions (First International Bank, Access Bank, Luma Microfinance Trust Ltd., Salone Microfinance Trust) have agreed to accept such a land agreement together with the groups’ existing savings or current accounts as collateral for two purposively designed credit products (personal comment, Marco Serena, 2011). The first is a microcredit of between € 100–400 (repayment period one year); the second is a loan of between € 1,000–2,000 (repayment period two years) with a yearly interest rate of 24 per cent. The number of households who could potentially benefit from the scheme, once fully established, is estimated at 2,500.”<sup>(39)</sup>

## iii. Positive impact of technical support to urban farmers for formulation of business plans

Urban farmers are frequently reluctant to apply for loans because of their limited capacity to put together an application and, more importantly, a business plan that does not go against their own interests. Financing institutions also repeatedly refer to the limited capacities of urban farmers on this front. The RUAF FStT programme, such as in Porto Novo (Benin), provides assistance, as a result of which a first batch of 19 loans was approved by a locally established MFI for around 130 tomato growers.

39. Interview with Marco Serena in 2010.



#### IV. Urban agriculture insurance system

Both Beijing and Shanghai have been setting up insurance and security systems for urban farmers, probably one of the most interesting mechanisms for consolidating urban farming activities. In Minhang district (Shanghai), Anxin Insurance Cooperation Ltd., a public finance institution, provides insurance to urban farmers, subsidized in 2009 to the value of 4.5 million Yuan (ca. US\$ 470,000). Fifteen types of insurance are tailored to different equipment and crops: greenhouses, vegetable plants, fruit and wheat, pig, cow and fowl breeding, seed production, agricultural implements and property insurance. The insurance system is one of the 10 pillars of a comprehensive subsidy policy. Information to date is insufficient to calculate what proportion of the insurance is devoted to small-scale urban agriculture, as it seems earmarked essentially for what in China is called “upper end” urban agriculture. In Huairou and Tongzhou districts in Beijing a similar system started in 2007, and so far 18 kinds of plants and breeds are insured for around 1,600 households; 30 per cent of the total cost is subsidized.

#### c. Other innovations to improve the urban agriculture financial sector

In addition to innovations that generate an enabling financial environment, other mechanisms improve the financial sector itself. They have been taken into account only tangentially in the local studies and could benefit from further development.

The first mechanism is to “divert” or channel mainstream financial resources to urban agriculture. Particular emphasis can be put on four different sources, so far largely untapped:

- rural agriculture loans;
- housing loans and subsidies, which can be used for the immediate productive surroundings of a home, including a garden to cultivate vegetables and sheds for animals, or home-based agro-processing activities;
- income-generating and job creation loans and subsidies that only marginally benefit poor urban farmers; and
- slum improvement resources and programmes that rarely consider urban agriculture. In other words, resources exist but need to be locally identified and tapped.

The second mechanism is evolutionary loans, with decreasing subsidy levels that allow urban farmers to pass through a couple of lending cycles, from a high level of subsidy to a conventional banking loan. These were implemented extensively and successfully in the city of Fortaleza (Brazil) in the mid-1990s as part of the Better Home programme, and are today part of a municipal policy.<sup>(40)</sup>

A third mechanism, probably the most innovative, is the creation of community banks and the issuing of local and regional currencies, such as the Banco Palmas in Fortaleza<sup>(41)</sup> and its local currency, the palma. The bank was created in 1998 with US\$ 2,000 in one of the most deprived *favelas* in Brazil. Capital in 2009 was around US\$ one million, primarily from a loan from the largest Latin American bank, Banco do Brasil.

Today, there are an estimated 6,000 local and regional currencies in circulation around the world,<sup>(42)</sup> which, in general, are convertible into

40. Cabannes, Y (1997), “From community development to housing finance: from *mutirões* to Casa Melhor in Fortaleza, Brazil”, *Environment and Urbanization* Vol 9, No 1, April, pages 31–58.

41. For additional information on Banco Palmas Community Bank visit <http://www.bancopalmas.org.br/>; also Melo, Joaquim with Elodie Bécu and Carlos de Freitas (2009), *Viva Favela ! Quand les Démunis Prennent leur Destin en Main*, Editions Michel Lafon, 284 pages.

42. Lietaer, Bernard and Margrit Kennedy (2008), *Monnaies Régionales, de Nouvelles Voies vers une Prospérité Durable*, Editions Charles-Léopold Mayer, 256 pages.

conventional currencies. Little is known about this understudied subject, but results so far are quite impressive and the approach could be used for community-based and pro-poor urban agriculture. These approaches all foster the circulation of local goods and the development of the local economy. In some (rare) cases, such as Banco Palmas, urban agriculture loans were provided and proved quite successful.

Households credits directed towards enhancing the consumption of locally produced food were not mentioned in any of the studies, which was surprising. Such credits for consumption were put into place in Banco Palmas and were authorized only in the local currency, and were crucial to generating a locally sustainable financial system, fostering local production and increasing local demand for locally produced food.

Participatory budgeting, a mechanism by which the population defines the destination of part or all of the public resources<sup>(43)</sup> emerged in 1989 in Brazilian municipalities, with Porto Alegre the most emblematic. Twenty years down the line, more than 1,400 municipalities in more than 40 countries have adopted variations on participatory budgeting as a means of deciding their financial priorities. Some cities, such as Seville in Spain, Rosario in Argentina and Porto Alegre in Brazil have included urban agriculture projects as an eligible priority. The results have been excellent and deserve greater attention. The most interesting aspect is that participatory budgeting offers a permanent, endogenous source of funding to organized urban farmers to finance exactly what they want and need.

43. Cabannes, Y (2004), "72 frequently asked questions about participatory budgeting", UMP-LAC, UN-Habitat, UNDP, Quito, downloadable from <http://www2.unhabitat.org/campaigns/governance/documents/FAQPP.pdf>, 46 pages.

## VI. CONCLUDING REMARKS: URBAN AGRICULTURE FINANCE IS A MAJOR BOTTLENECK FOR FEEDING CITIES

Findings from the 17 city research, which confirms and expands the previous study, can be summarized as follows: the financing of urban and peri-urban agriculture is a major bottleneck in maintaining, expanding and scaling up affordable, accessible food production in cities. Governments, banks and international aid agencies need to support urban farmers all along the value chain. National and municipal urban agriculture policies should have a strong, clear subsidy component aimed at the key bottlenecks in the finance system. Governments and finance organizations could concentrate on supporting, consolidating and transferring innovations currently taking place in various cities and that are quite promising for the future.

The studies indicate the need to stimulate local finance institutions and local governments to create adequate funding windows for small-scale urban producers. A powerful co-funding facility should be created and supported to channel a mix of funding and subsidies to the sector through, for example, small grants to subsistence agriculture, revolving local funds, grants for technical advice and support to business plans, guarantee funds and insurance facilities. RUAF, with its capacity to bridge the gap between cities and local producers and international institutions, could play a central role in creating such a much-needed facility. Debates on this topic are underway as a consequence of this research. However, its success implies a major involvement of the international community to support the initiative.

This is the price to pay if we want to be serious about expanding urban and peri-urban agriculture and increasing the capacity of cities to produce affordable nutritious food, not only for the better off, but for the poor and the most vulnerable.

## APPENDIX 1

List of 17 case studies on financing urban agriculture – RUAF Foundation reports available at [www.ruaf.org](http://www.ruaf.org)

Adeoti, Adetola I (2010), "Current practices of finance institutions and programmes for urban agriculture in Ibadan (Nigeria): opportunities, difficulties and bottlenecks in financing small-scale urban agriculture, RUAF Foundation, Leusden, the Netherlands, 82 pages.

Al Jundi, Rasha (2010), "Applied study on local finance and credit for poor urban and peri-urban producers, Sana'a (Yemen)", RUAF Foundation, Leusden, the Netherlands, 54 pages.

Daher Borges, Kelen Aparecida and Simião Gomes Leão (2010), "Relatório sobre as demandas e as possíveis fontes de créditos e financiamentos para os agricultores urbanos de Belo Horizonte (Brasil)", RUAF Foundation, Leusden, the Netherlands, 60 pages.

Egyir, Irene S (2010), "Applied study on local finance for poor urban and peri-urban producers in Accra (Ghana)", RUAF Foundation, Leusden, the Netherlands, 99 pages.

Figueroa, Mónica, Jenny Huertas, Indira López, Sandra Mesa, Liliana Ramírez, Álvaro Sarria (2010), "Estudio aplicado de finanzas locales para agricultores urbanos y periurbanos en condición de pobreza en Bogotá (Colombia)", RUAF Foundation, Leusden, the Netherlands, 51 pages.

Glele, Eugène K A (2009), "Accès au crédit et financement de l'agriculture urbaine et péri-urbaine à Porto Novo (Benin)", RUAF Foundation, Leusden, the Netherlands, 151 pages.

Jayasinghe-Mugalide, Udith (2009), "Study on local finance for urban and peri-urban producers – Gampaha (Sri Lanka)" (final version), RUAF Foundation, Leusden, the Netherlands, 37 pages.

Jianming, Cai and Guo Hua (2010), "Financing for urban agriculture in Tongzhou and Huairou district, Beijing (China)", RUAF Foundation Report, Leusden, the Netherlands, 15 pages.

Konneh, Pamela (2010), "Applied study of credit and financing opportunities for farmers in urban and peri-urban Freetown (Sierra Leone)", COOPI Internationale and RUAF Foundation, Leusden, the Netherlands, 85 pages.

Magadza, S N, S Chimhenga, L Hadebe, J Mpofu, P Nkala and P Sibanda (2010), "Local finance for small-scale urban and peri-urban agricultural producers in Bulawayo (Zimbabwe)", RUAF Foundation, Leusden, the Netherlands, 123 pages.

Mangaliso, Mdlalo (2010), "Study on financing of small-scale urban and peri-urban agricultural producers in Cape Town (South Africa)", RUAF Foundation, Leusden, the Netherlands, 36 pages.

Ouattara, Hyacinthe (2009), "Etude sur l'accès au crédit et le financement de l'agriculture urbaine et périurbaine à Bobo Dioulasso (Burkina Faso)", RUAF Foundation, Leusden, the Netherlands, 61 pages.

Phiri, Obby Y Z (2009), "Applied study on local finance for poor urban and peri-urban producers, Ndola (Zambia)", RUAF Foundation, Leusden, the Netherlands, 62 pages.

Ramalingegowda, U C, P S Srikanthamurthy, N Nagaraj and M G Chandrakanth (2010), "Credit and financing study, Magadi-Bangalore (India)", RUAF Foundation, Leusden, the Netherlands 24 pages.

Sáenz H, Ernesto (2010), "Estudio: mejorando el acceso a capital de los agricultores urbanos. Estudio aplicado de finanzas locales para agricultores urbanos y peri urbanos en condición de pobreza, Lima (Peru)", RUAF Foundation, Leusden, the Netherlands, 55 pages.

Samir El-Habbab, Mohammad (2010), "Local finance for poor urban and peri-urban producers, Amman (Jordan)", RUAF Foundation, Leusden, the Netherlands, 52 pages.

Yin Zheng, Liu Ming and Cai Jianming, (2010), "Urban agricultural financing in Minhang district, Shanghai (China)", RUAF Foundation Report, Leusden, the Netherlands, 14 pages.

## REFERENCES

- Adeoti, Adetola I (2010), "Current practices of finance institutions and programmes for urban agriculture in Ibadan (Nigeria): opportunities, difficulties and bottlenecks in financing small-scale urban agriculture, RUAF Foundation, Leusden, the Netherlands, 82 pages.
- Al Jundi, Rasha (2010), "Applied study on local finance and credit for poor urban and peri-urban producers, Sana'a (Yemen)", RUAF Foundation, Leusden, the Netherlands, 54 pages.
- Cabannes, Y (1997), "From community development to housing finance: from *mutirões* to Casa Melhor in Fortaleza, Brasil", *Environment and Urbanization* Vol 9, No 1, April, pages 31–58.
- Cabannes, Y (2004), "72 frequently asked questions about participatory budgeting", UMP-LAC, UN-Habitat, UNDP, Quito, downloadable from <http://ww2.unhabitat.org/campaigns/governance/documents/FAQPP.pdf>, 46 pages.
- Cabannes, Yves (2006), "Financing and investment for urban agriculture", Chapter 4 (including case studies) in René van Veenhuizen (editor), *Cities Farming for the Future, Urban Agriculture for Green and Productive Cities*, RUAF Foundation, Leusden, the Netherlands, pages 87–123.
- Daher Borges, Kelen Aparecida and Simião Gomes Leão (2010), "Relatório sobre as demandas e as possíveis fontes de créditos e financiamentos para os agricultores urbanos de Belo Horizonte (Brasil)", RUAF Foundation, Leusden, the Netherlands, 60 pages.
- Egyir, Irene S (2010), "Applied study on local finance for poor urban and peri-urban producers in Accra (Ghana)", RUAF Foundation, Leusden, the Netherlands, 99 pages.
- Figuerola, Mónica, Jenny Huertas, Indira López, Sandra Mesa, Liliana Ramírez, Álvaro Sarria (2010), "Estudio aplicado de finanzas locales para agricultores urbanos y periurbanos en condición de pobreza en Bogotá (Colombia)", RUAF Foundation, Leusden, the Netherlands, 51 pages.
- Glele, Eugène K A (2009), "Accès au crédit et financement de l'agriculture urbaine et péri-urbaine à Porto Novo (Benin)", RUAF Foundation, Leusden, the Netherlands, 151 pages.
- Jayasinghe-Mugalide, Udith (2009), "Study on local finance for urban and peri-urban producers – Gampaha (Sri Lanka)" (final version), RUAF Foundation, Leusden, the Netherlands, 37 pages.
- Jianming, Cai and Guo Hua (2010), "Financing for urban agriculture in Tongzhou and Huairou district, Beijing (China)", RUAF Foundation Report, Leusden, the Netherlands, 15 pages.
- Konneh, Pamela (2010), "Applied study of credit and financing opportunities for farmers in urban and peri-urban Freetown (Sierra Leone)", COOPI Internationale and RUAF Foundation, Leusden, the Netherlands, 85 pages.
- Lietaer, Bernard and Margrit Kennedy (2008), *Monnaies Régionales, de Nouvelles Voies vers une Prospérité Durable*, Editions Charles-Léopold Mayer, 256 pages.
- Magadza, S N, S Chimhenga, L Hadebe, J Mpofu, P Nkala and P Sibanda (2010), "Local finance for small-scale urban and peri-urban agricultural producers in Bulawayo (Zimbabwe)", RUAF Foundation, Leusden, the Netherlands, 123 pages.
- Mangaliso, Mdlalo (2010), "Study on financing of small-scale urban and peri-urban agricultural producers in Cape Town (South Africa)", RUAF Foundation, Leusden, the Netherlands, 36 pages.
- Melo, Joaquim with Elodie Bécu and Carlos de Freitas (2009), *Viva Favela ! Quand les Démunis Prennent leur Destin en Main*, Editions Michel Lafon, 284 pages.
- Mougeot, L (2005), *Agropolis. The Social, Political and Environmental Dimensions of Urban Agriculture*, Earthscan, London, 286 pages.
- Ouattara, Hyacinthe (2009), "Etude sur l'accès au crédit et le financement de l'agriculture urbaine et périurbaine à Bobo Dioulasso (Burkina Faso)", RUAF Foundation, Leusden, the Netherlands, 61 pages.
- Phiri, Obby Y Z (2009), "Applied study on local finance for poor urban and peri-urban producers, Ndola (Zambia)", RUAF Foundation, Leusden, the Netherlands, 62 pages.
- Ramalingegowda, U C, P S Srikanthamurthy, N Nagaraj and M G Chandrakanth (2010), "Credit and financing study, Magadi-Bangalore (India)", RUAF Foundation, Leusden, the Netherlands 24 pages.
- Sáenz H, Ernesto (2010), "Estudio: mejorando el acceso a capital de los agricultores urbanos. Estudio aplicado de finanzas locales para agricultores urbanos y peri urbanos en condición de pobreza, Lima (Peru)", RUAF Foundation, Leusden, the Netherlands, 55 pages.
- Samir El-Habbab, Mohammad (2010), "Local finance for poor urban and peri-urban producers, Amman (Jordan)", RUAF Foundation, Leusden, the Netherlands, 52 pages.
- [www.bancopalmas.org.br/](http://www.bancopalmas.org.br/)
- Yin Zheng, Liu Ming and Cai Jianming, (2010), "Urban agricultural financing in Minhang district, Shanghai (China)", RUAF Foundation Report, Leusden, the Netherlands, 14 pages.