

Report of the Evaluation of the Growing Connection

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Evaluation Team:

John Markie - Team Leader

William Lindley (North and Latin American visits, education, extension and training)

Kay Leresche (South Africa visits and discussions)

Wilfried Baudoin (horticultural production technology and systems)

Executive Summary

- 1) The evaluation was requested by the FAO Liaison Office for North America and the US Committee for FAO and undertaken by the FAO Evaluation Office, using an independent team of four consultants with experience of FAO. Between them they covered institutional, technical and educational aspects.
- 2) The Growing Connection (TGC) is not strictly speaking an FAO activity, but an activity of the independently constituted US Committee for FAO. This having been said the Organization through the Liaison Office in Washington (LOW) has invested over US\$ 2 million in The Growing Connection over the last six years. In addition many volunteers in North America and beyond have given heavily of their time and effort. The Organization must assess its support to The Growing Connection in terms of the contribution to the Organization's objectives and The Growing Connection was found to have been largely, if not fully, in line with those objectives. Conclusions were therefore based principally on its effectiveness in contributing to FAO's objectives. Account was also taken of the fact that when the Growing Connection was established the current objectives were not as clearly formulated in a results-based framework for the Organization as a whole as is currently the case.
- 3) The Earth Box (a box for growing vegetables and salads) is central to the present strategy of The Growing Connection but it is a proprietary technology whose owners have donated subsidised boxes. The Growing Connection, and by association FAO, is strongly promoting a proprietary technology which has not in so far as the evaluation could determine been systematically analysed against competitors. The lack of FAO technical involvement in the programme has meant that the Growing Connection has not drawn on the emerging options for micro-gardening. The Earth Box with its current start-up investment costs is not a viable technology for low income households and communities in developing countries. It may be viable for urban household production in developed countries and by the middle classes in developing countries but the investment cost remains a disincentive. As a school teaching aid it can be useful, especially for developed countries, but even here cost is an issue. There is however, an interest in and need for production of vegetables and salads in containers, which can be easily moved, raised off the ground, need less water, reduce heavy labour, especially for children, HIV-AIDS victims, etc.
- 4) The sustainability of the Growing Connection has relied on the dedication and enthusiasm of two staff in the Liaison Office for North America (LOW). There has not been significant involvement from other units of FAO and in the absence of this LOW support the Growing Connection would cease, unless an alternative institutional model were to be introduced. If the Growing Connection were to be discontinued today, work in Mexico would continue at a similar modest level to that at present, possibly without the Earth Box and in Nicaragua an NGO would continue its work in vegetable gardening and nutrition which was initiated prior to the Growing Connection and to which the Earth Boxes have been a useful adjunct. In South Africa, Operation Lionheart introduced its Earth Box programme before making contact with the Growing Connection and will no doubt continue it. The Earth Box would also continue to be used as a teaching aid in some North American schools.
- 5) The Growing connection has brought together nutrition and production in an educational outreach which has some similarities with Farmers' Field Schools. This has been a strength in comparison with those programmes which have tended to emphasise either production or nutrition in isolation from the other. In schools teachers like the Earth Box and it does make it easier to demonstrate the basics of plant growth than a bed in a garden. The Box is not however unique in this respect and as a purely educational tool may not be the ideal. Improvements in communication between people's of different countries around a common "growing experience" using common technology has not taken off in any meaningful way and was not found to be a priority for either

developing countries or North America.

6) The Growing Connection does raise awareness of FAO in the USA, but the lasting impact of the schools' programme on public opinion is likely to be low and even less on awareness of the issues of hunger and malnutrition in the developing world. Whether greater results for FAO's mission could have been obtained by investing all or part of these resources in alternative liaison activities is difficult to say, as it was not evaluated but in view of the limited impact, it does appear likely that this would have been the case. The Growing Connection has provided a point of entry for discussions with the US private sector and Foundations on funding for developing countries. There can be little dispute that a tremendous amount of energy has gone into this. Rather little has as yet yielded concrete results, but the Soros Foundation, in particular, remains interested.

7) The US Committee for FAO has largely acted as a conduit for funds for the Growing Connection and other occasional donations to FAO. It has become almost dormant and its potential to mobilise resources for fighting hunger and malnutrition has remained largely unrealised and questions remain on what potential there really is. The US is a crowded and competitive market but it is also by far and away the biggest single resource for private philanthropy. As recognised in the TeleFood evaluation, active support for an Organization (FAO) is also frequently mobilised when it is linked to giving and the givers feel a sense of ownership.

8) It is recommended that major decisions now need to be made by FAO on the future of the Growing Connection taking full account of its results to date:

- FAO needs to decide whether the resources of LOW should now be invested in alternative liaison activities to the Growing Connection which might potentially achieve greater impact; and
- The Organization needs to be able to offer a wider range of validated and documented options for micro gardening than appears to be the case at present, including non-proprietary box type technologies which can be adapted to local situations. The Organization also needs to consider if there are lessons from the Growing Connection to be integrated in its mainstream programmes, such as those for National Food Security. In particular the integration of nutrition and production together with an educational approach has value.

9) In a time-bound effort, the US Committee for FAO (501(c)(3) Corporation) should be reconstituted with a broader membership, perhaps including some of the major supporters of the Growing Connection. A targeted but flexible strategy and business plan/project document should be elaborated in detail for a 3-4 year effort to re-launch the Committee as a fully functioning, free standing body mobilising resources and undertaking a charitable and educational strategy for awareness building and increased and improved food production and access to food, principally to be undertaken in the overall framework of FAO. This strategy should include a wider perspective of the Corporation's charter and FAO's mission than that provided by the Growing Connection, with an increased menu of opportunities for contribution, including to resources to be devoted to FAO's National Programmes for Food Security, emergency programmes and environmental action and the development of specific projects for potential financing by Foundations, etc. These may include a modified form of the Growing Connection. FAO should kick start this effort by making a grant for two years to the Committee.

I. Introduction

10) The evaluation was requested by the FAO Liaison Office for North America and the US Committee for FAO and undertaken by the FAO Evaluation Office, using an independent team of four consultants with experience of FAO. Between them they covered institutional, technical and

educational aspects.

11) Terms of Reference of the Evaluation are attached as Annex 3. The evaluation was undertaken by FAO to assess the extent to which its support to the Growing Connection furthers the Organization's objectives, in the context of the new Strategic Framework and Medium-Term Plan for FAO. This elaborates the Organization's Strategic and Functional Objectives and places these in a results based framework. All FAO's work must now be assessed in terms of its priority in contributing directly to these objectives. Emphasis was thus on assessing the development effectiveness of the Growing Connection and its additionality to the Liaison function of the FAO Liaison Office for North America (LOW) in their contribution to:

- a) Strategic Objective H – Improved food quality and nutrition – H3 Strengthened capacity of member countries and other stakeholders to address specific nutrition concerns in food and agriculture; and
- b) Functional Objective X – Effective collaboration with member states and stakeholders – X3 Key partnerships and alliances that leverage and complement the work of FAO and partners.

At the same time, the evaluation team was aware that these objectives and the results-based framework were not so directly specified for the Organization as a whole at the time the Growing Connection originated.

12) The evaluation worked through focus group and individual interviews, study of documentation and direct observation of results at Growing Connection sites. Short visits were made to a representative sample of relatively successful sites in the USA, Mexico, Nicaragua and South Africa. Thus, the main countries of current ongoing activity were all visited with the possible exception of Haiti which the evaluation did not visit in view of the tragic recent earthquake.

II. Background to The Growing Connection

Origins of the Programme

13) There is very little name recognition for FAO in North America and in 2001 FAO (TeleFood) and private sector cooperation brought about a series of concerts in the USA focused on raising awareness of the problems of hunger. This concert series "Groundworks" was largely sponsored by the IT industry and immediate discussions on follow-up led to the idea of linking small projects for intensive vegetable production by disadvantaged communities in developing countries with sources of information and the experiences of others.

14) With support from the FAO Liaison Office for North America in Washington (LOW), the idea of the Growing Connection developed with experience from an ongoing programme working with school gardens in Ghana. FAO managers at the time considered that the senior liaison officer post was relatively ineffectual and it was reoriented first to support the Groundworks series of concerts and then The Growing Connection. The initially hoped for support from the IT industry did not emerge on the scale which had been hoped partly as a result of the Dotcom bust which initiated in March 2000 and reached its lowest point in 2002/3. The idea of The Growing Connection gradually broadened to include programmes in the United States, to extend knowledge of vegetable production and nutrition principally in schools and to develop links between the programmes in the developing countries and in the United States, thus extending an understanding of development issues in North America. It thus moved to give an emphasis in the liaison function of LOW to more direct engagement with ordinary Americans.

15) From its origins in 2001-2, The Growing Connection was officially launched in 2004 with the continued support of LOW and the concept of linking programmes in the USA with those in developing countries using IT and around production of vegetables from a common technology, the

Earth Box (the Earth Box is discussed in more detail below. It is a proprietary technology consisting of a plastic box with a water reservoir for growing plants). Funding was envisaged as passing through the "US Committee for FAO" which is a non profit corporation registered in Washington DC, permitting donations eligible for tax relief. Much of the funding has come to be mobilised locally and to pass directly to the Organizations undertaking Growing Connection projects.

16) Over time, The Growing Connection has developed two rather distinct programmes:

- a) A set of projects in developing countries; and
- b) A programme in the USA which is now being extended to Canada, principally but not exclusively in schools.

17) The objectives of The Growing Connection have evolved and have not been formalised, but in as far as the evaluation could ascertain they may be stated as follows:

- a) In both North America and developing countries to:
 - address nutrition problems through projects which introduce participants to production of vegetables to supplement the diet and through education linked to that production experience,
 - educate people in how plants grow, including encouraging them to document the process, and
 - improve communication between peoples of different countries and within the same country around a common "sustainable best-practice growing experience".
- b) In North America to further the liaison function by raising awareness of FAO and of the problems of food and hunger in the world and FAO's role in addressing those problems; and
- c) To raise resources, principally in the USA, to address hunger and malnutrition in developing countries.

Institutional arrangements

18) The Growing Connection is not strictly speaking an FAO activity but FAO is very closely associated with it. The original sponsors or partners were stated as FAO and the American Horticultural Society but the Horticultural Society later dropped its very limited support. The driving force behind the programme has always been LOW staff and part of its rationale is to promote the message and image of FAO in North America. Everywhere that the evaluation went, except South Africa, the FAO logo was displayed and this is also the case on some of The Growing Connection literature.

19) **Advisory Board:** There is no real governance structure for The Growing Connection. It has an advisory board identified by LOW and constituted from promoters, experts and sponsors. This Board has met virtually, first in May 2005 and then in the first year twice and subsequently once a year, with the last meeting taking place in September 2008. Meetings have been largely devoted to prospects for expanding the programme but the last board meeting did give some attention to problems such as the lack of data on productivity and nutritional impact.

20) **The US Committee for FAO** was incorporated in 1997 as a 501(c)(3) Corporation operating exclusively for charitable and educational purposes to provide a vehicle for information in the US on food and hunger and to mobilise resources for projects, particularly for projects to increase food production and access to food, while being eligible for US tax relief. It may not undertake lobbying or commercial activity. The purposes are quoted in Annex 1. Receipts from the Ground Works concerts in 2001 for TeleFood passed through the Committee. Funds mobilised in the USA for Growing Connection projects overseas have normally, but not always, passed through the Committee.

Funding for work in US schools, etc. is mobilised locally. The Committee could have an oversight role for The Growing Connection but it has not to date taken this up and The Growing Connection currently lacks an accountability framework. The Committee previously received reports on the results of TeleFood programmes funded through the Committee and was thus able to make a link to donors but this has not been the case for The Growing Connection, although financial transactions are reported and the Committee has received verbal reports.

21) LOW provides financial and secretarial services to facilitate the duties of the Board of Directors and the Officers of the Corporation (President, Secretary, Treasurer). The members of the Board of Directors tend to be of retirement age and three are former FAO staff. 501(c)(3) Corporations may charge legitimate expenses (overheads¹) against contributions received, but at present the Committee it has no mechanism for making a charge on monies passing through it and has had no income of its own. This has meant that it has not had resources to pay for an audit for 2009, an impediment to receipt of funds in some states. The expenses of the officers of the Committee are also not covered. There is no website and the Committee has not met formally for over two years.

22) **FAO Headquarters** has played a very limited role in The Growing Connection. A clearance which can best be described as “no objection” was given for the Earth Box. There has been little technical support from FAO, although such support was requested by The Growing Connection. Most of the concerned units report that they did not become involved because they were not comfortable with the production strategy and its emphasis on Earth Boxes. The units responsible for nutrition (AGN) did provide educational materials, especially on nutrition and school gardens but noted “there appears to have been limited opportunity by The Growing Connection to take advantage of available FAO materials and advice on nutrition education. It may have been in the nature of the programme and its institutional set up, i.e. not an FAO activity and with little FAO influence over national implementation”).

23) The **FAO Representations**, in countries where The Growing Connection has been active have been informed and some but not all have had some involvement in arranging imports of boxes visits to sites, etc.

24) **The FAO resources** devoted to The Growing Connection have largely come from LOW where one P5², one G4 and, during much of the life of the programme, a junior consultant have devoted the great majority of their time to the programme. Travel money has also been provided. There has been no major input from FAO headquarters and a limited input from some FAO Representations. Thus, some US\$ 400 - 500,000 per annum is being devoted to the Growing Connection by FAO. All other resources have been mobilised externally, principally for purchase of the Earth Boxes³ but also for training with much of this input having been supplied in kind.

25) **Monitoring and Reporting:** The Growing Connection Secretariat in LOW has a genuine problem in reporting progress and results. There is a data sheet for reporting by participants but the secretariat have to rely on the information provided by partners which are volunteers and feel varying degrees of belonging to The Growing Connection and their feeling of belonging often declines over time. Thus, it should be possible, for example, to state how many Earth Boxes have been despatched but not necessarily if they are used and certainly not production data as this has not been recorded. Data on how many people are directly involved in work with The Growing Connection and Earth Boxes also relies on information provided by participants. Data sheets are not regularly or fully returned and the limited available information supplied to the secretariat has not

¹ Including secretariat staff costs, rents, liability insurance, audit and state registration fees, etc.etc.

² Original terms of reference are those of a senior liaison officer

³ See below for discussion of the Earth Box

been compiled due to lack of staff resources. Only two actual Progress Reports have been produced over the life of the programme (2006 and 2007). A summary report was produced for the Director-General in February 2010. The 2007 progress report did provide a list of sites, the only such list to have been provided to the evaluation. No data on numbers of Earth Boxes, etc. was provided.

III. Results

Results in Developing Countries

26) The first country activity was in Ghana, and the largest programmes are now in Mexico, Nicaragua, and South Africa with the prospect of a significant programme in Angola. Some information is also available on work in Haiti and Kenya. The evaluation team visited a sample of sites in Mexico, Nicaragua and South Africa. Information is largely anecdotal. The Growing Connection input has largely consisted of supplying Earth Boxes and training, etc. for their use. This has most commonly been taken up by an existing institution and in so far as the evaluation could ascertain most of these institutions had already been promoting gardening.

27) **Ghana:** The NGO Development Assistance to School Farms (DASFA) was established in 2000 and supported school gardens and livestock with donations from various sources. The first Earth Boxes were introduced in 2005 and the reports indicate that five senior secondary schools, a school for the deaf and dumb and the Accra Vegetable Growers Association received Earth Boxes. The work is no longer being reported and the present use of the boxes is not known. The Growing Connection may have served a function in also putting DAFSA in touch with sponsors.

28) **Haiti:** The programme was undertaken by the charity Medishare which initially received a donation of 220 boxes in 2008. A Medishare agronomist undertook trials on species of vegetable to produce and a suitable growing substrate. The trial involved 25 poor adolescents. Boxes were distributed in 2009 to a clinic, five elementary schools and 50 women. Following the earthquake of 2010 FAO included in its Flash Appeal a request for funds for Earth Boxes to be used in refugee camps and US\$ 2 million was raised for this purpose from the UN Central Emergency Response Fund but AGP did not provide technical clearance for the technology, preferring other less capital intensive and less sophisticated urban agriculture approaches. At the time of writing it is not clear in exactly what form this development will take place and in any case the projects form part of the FAO relief effort managed by the Emergency Operations Division, rather than The Growing Connection. There is some interest in Haiti in producing an Earth Box locally.

29) **Kenya:** The International Rescue Committee introduced 300 Earth Boxes in 2006 to the Kakuma Refugee Camp in Turkana (a hot and arid area), with the intention that the vegetable production would improve the quality of food aid rations. There were said to have been 100 training sessions and a consultant who had introduced Earth Boxes in Ghana visited the site as well as an agronomist. The Boxes were distributed to individual families to supplement the production from kitchen gardens near water points but do not seem to have been used properly, for example watering was taking place from the top and there were problems with the purchased cocoa peat which had not been sterilised and carried pathogens. The last report from this site is dated 2007.

30) **Mexico:** In Mexico activities were initiated in 2004. There is a capable and motivated volunteer coordinator for The Growing Connection. A leadership role is also played by highly motivated individuals in the agronomy and extension departments of the University of Guadalajara backed by student volunteers. The University has financed trials on substrate mixes and support to the volunteers and its staff. The volunteers do the field work but can only get to sites about twice a year. Financial support for Earth Boxes, plastic green houses and formal training has come largely from the NGO Selva Negra which is supported by the rock group Maná. This group was a major participant in

the Ground Work concert series and its members have been appointed FAO Ambassadors. Selva Negra has been heavily involved in work to conserve sea turtles with local communities, many of which are indigenous Indians. This work was extended to support of the dissemination of the Earth Box.

31) There are 12 sites in Mexico, of which seven are in Jalisco (5 indigenous including 2 elementary school sites and a site at a centre for indigenous people obtaining medical treatment in Guadalajara), one at a Montessori elementary school in Mexico City and four in Chiapas (2 indigenous). The four sites in Chiapas have access to computer/internet connectivity through the AMD⁴ Learning Labs. In these sites the overall programme has an educational IT component, as well as the Earth Boxes. Turtle conservation continues to be an important part of the programme in all the coastal areas. Selva Negra is also working with the Dominican Republic where Earth Boxes are being introduced to a hotel and a school. Emphasis is on eco-production with use of organics (principally worm castings) instead of chemical fertilizer and bio-insecticides.

32) Selva Negra is interested to work with an alternative Box and is encouraging a trial of one non-patented design. It wishes to work with a micro-credit NGO to encourage various forms of community development, including vegetable production.

33) The Indian communities are of 100-300 families and live in quite hostile environmental conditions with poor soils and have poor diets. They have been assisted to build plastic houses and manage the boxes through schools or their communities but over time a few women in each community have often taken on the main responsibility and some boxes may become in effect individually owned. In one community, for example initially, 120 families were trained and involved but this dropped to 36 over the course of two years. Numbers benefiting meaningfully are difficult to calculate but must be at least 2,500.

34) The standard diet of the indigenous communities is maize and beans. The Earth Box was said to have introduced new leafy vegetables in addition to the tomatoes and onions grown traditionally and observers believed there had been some nutritional improvement in children but this was difficult to document.

35) The partners in Mexico do not believe that international connectedness in The Growing Connection has functioned and do not regard it as important to develop it. They believe that activities in Mexico will be sustained once an alternative to the Earth Box has been found and that this can be done without the necessity for any FAO involvement. Selva Negra is convinced that if the problem of cost can be solved, the Ministry of Agriculture will be interested in the programme for poor communities.

36) The FAO Representation in Mexico has not had major contact with The Growing Connection. It is of the view that although The Growing Connection has not been an urban development in Mexico, it is here that the interest for FAO lies because it could raise the profile of the Organization in this largely urbanised country, where poverty and malnutrition is as much an urban as rural phenomenon.

37) **Nicaragua:** The Growing Connection began in Nicaragua, supported by the previous FAO Representative as part of the National Programme for Food Security (PESA) in 2005. INTA, the research and extension arm of the Ministry of Agriculture, undertook trials to develop an acceptable local substrate based on coco fibres which did not lead to acceptable results due to its limited capacity to store water and due to its limited availability. Following additional trials the best results

⁴ Advance Micro Devices – a computer company

were obtained by using a mixture of rice husks, soil and worm castings. In 2006 500 Earth Boxes were imported for work in schools and introductory training was provided for national agronomists, teachers, etc. Two hundred of the boxes were to be supported in schools by the Nicaraguan Institute for Rural Promotion, 60 by the Ministry of Education 60 by INTA itself and 60 by a catholic national charity, the Fabretto Foundation. In total 36 schools were to be involved with over 4,000 students participating.

38) In 2008, the Ministry of Agriculture and FAO through the FAOR reviewed their policy with respect to the extended National Programme for Food Security (PESA). Prior to this a systematic evaluation was carried out in which all project partners participated (Ministry of Education, Fabretto, "*Instituto de la Promocion Humana*" and FAO. The main conclusions were to reorganise the distribution of the existing boxes to fulfill only educative functions. It was concluded that the technology based on the Earth Box was too costly to be sustainable and could not be up-scaled to meaningfully address nutrition problems. PESA is currently supporting a school garden programme in cooperation between INTA and the Ministry of Education which employs less capital intensive production techniques.

39) Fabretto has however continued to give some prominence to the Earth Box in its school gardening. Fabretto works mainly in Somoto province. Its aim is to support development and education of children and young people through provision of supplementary feeding and education, both to broaden the education received in school and to provide vocational skills. This is facilitated because Nicaragua's schools are generally on two shifts, a morning shift and an afternoon shift. Fabretto's education programmes include, computers, gardening, arts and sport. The Growing Connection Earth Boxes were an addition to the existing programme in schools and in its separate centres. It has six centres and works with 48 schools of which some 14 are high schools and the remainder elementary.

40) Fabretto now has 229 boxes in 30 locations. Depending on their usage Fabretto redistributes boxes between locations. It finds the boxes serve as a good educational tool, especially for young children. However the cost of the boxes is a major constraint for Fabretto in extending the programme and students are highly unlikely to use the boxes at home because of their cost, the need for a special growing medium, etc. Vegetable production in general has been linked to the supplementation of the food aid diet for supplementary feeding and to education on nutrition. Parents, teachers and volunteers are also involved in support to the programme and thus benefit from it. Numbers reached are very difficult to estimate, especially numbers meaningfully reached but orders of magnitude for real involvement is probably of the order of 100-200 with some 1,000 plus having some familiarity with the boxes each year (of which many maintain some involvement over 2-3 years).

41) Most of the Fabretto locations have computers as part of there education development programme and in those locations where connectivity is reasonable some students look up things on the Internet but the general view expressed to the evaluation was that networking overseas was not a priority and at the moment computers are not generally used to communicate between Fabretto locations. Fabretto does maintain a comprehensive central data base on all students and at the moment there is no real recording of gardens or the Earth Boxes.

42) **South Africa:** The first contacts in South Africa came about through the Earth Box Company in USA and its proprietor Mickey Lynch who has been active in supporting The Growing Connection. He put Operation Lionheart Trust and the associated private company (that manufactures the Earth Box under license from recycled plastic), in contact with The Growing Connection. Operation Lionheart's stated missions is:

- “To distribute an award winning, self-contained gardening system, the Earth Box that allows individuals and families in any situation to successfully grow food for their own consumption and to sell or barter the surplus; and
- To find and promote innovative products and models of food production that will advance sustainable self-sufficiency and entrepreneurship in impoverished communities in Southern Africa.

43) The Earth Box in South Africa has been manufactured under licence by Operation Lionheart Pty. Ltd. since June 2009. Royalty is paid on each box supplied and the company has been granted the sole licence to supply the boxes in Africa. Operation Lionheart Trust fulfils orders for charitable organizations and carries out training and mentoring of the projects. Operation Lionheart Pty. Ltd. has also started to sell Earth Boxes privately through distributors. The growing medium (coconut peat) was originally imported from Sri Lanka but is now being sourced in Mozambique. The dolomite and the organic fertilizer used and supplied with the box are locally sourced. For some projects Operation Lionheart also provides some insecticides/fungicides. Under a separate contract training for the users, together with quarterly mentoring visits are provided to all the projects.

44) Operation Lionheart Trust normally responds to requests for Earth Boxes from donors. It supplies them, together with training and support, to preselected communities, groups, schools, etc.⁵ Operation Lionheart is not part of a South African horticultural network and has limited access to gardening expertise⁶ and even less expertise in the social factors involved in the implementation of such projects. The Growing Connection is currently providing some support primarily from its US network and LWA.

45) The involvement of The Growing Connection has thus been to provide networking support to Operation Lionheart (e.g. problems with whitefly, diseases etc) and on possible improvements to the technology. Advice has also been provided on how to work with communities, schools and charitable organizations and developing a model for training and a post-implementation strategy but with absolutely no experience of conditions in South Africa. Operation Lionheart have sent people (one has since left the Trust) for training to the USA paid by themselves, but with arrangements through the Growing Connection. The Growing Connection has also provided contacts with donors for some of the projects (for example Open Society Foundation of South Africa) and without them fewer Earth Boxes would have been distributed. Operation Lionheart is also now working with them on a project to be operated by Joint Aid Management in Angola funded by USDA, with the contract, now being discussed, directly with The Growing Connection. There is no potential for the users themselves to benefit from networking but one of the NGOs associated with the implementation appreciated the interaction.

46) Although aware of the programme, the FAO Representation has not been in any way associated with any of the projects and has received no information, good or bad, on the introduction of Earth Boxes in South Africa. They would like to have more information as it might be useful to include them in some of the newly established, and closely supervised, Telefood vegetable projects where they may be relevant to the HIV households.

47) The evaluation team visited four sites each of which had received 500 boxes. In all cases the main purpose was production of vegetables, rather than educational (although there are

⁵ The projects seen by the Evaluation were funded by the Open Society Foundation South Africa and Mary Slack & Daughters Trust (via OLT).

⁶ They are in the process of hiring an agronomist to assist with extension but unless that person is linked into some horticultural expertise or research centre, they will find addressing the issues that arise difficult and continue to rely on the Growing Connection

some school projects in South Africa). At three of these centres the Earth Boxes were being put to use. Of these, one was an orphanage and two were community feeding centres with a focus on orphan headed households. One site indicated that as a result of the boxes, they have been able to feed the children and the vulnerable in the area and from the sales of surplus vegetables in one year, they had produced enough surplus to finance an additional borehole. The other two sites visited were less convinced of the value of the Earth Box (see Earth Box discussion) and at one it was unclear whether the vegetables were benefitting the vulnerable households or primarily those visiting the centre and those tending the gardens. The fourth site was an HIV Drop in and Municipal Welfare Centre. Instead of retaining the boxes as a community project for distribution of the produce to disadvantaged households, as intended, at the instigation of the local chief, the boxes had been given out to individuals and to a crèche, with very little technical support. Some boxes went to comparatively wealthy households and some were abandoned. Households treated the boxes in the same way as pots, watering them from the top, etc. without use of the covers, but some did value them, as by placing them on roof tops they were kept out of the way of scavenging cattle, goats, chickens, etc.

Results in North America

48) **Coverage:** The Growing Connection is concentrated on schools, with the greatest concentration being on the Eastern Sea Board and around Chicago, with some examples elsewhere and recent introductions in Canada. The 2007 progress report lists 37 sites which have received Earth Boxes in the USA and there are now more sites. Nearly all of these are schools (of the schools which could be identified by level, slightly over half were elementary and the remainder middle and secondary). Some were relatively poor inner city schools and others were very definitely middle class suburban. At sites visited there was a high level of commitment by a few key leaders (often teachers but sometimes parent volunteers). Many local governments, municipalities, voluntary organizations, etc. in the USA are involved in promoting urban horticulture, organic and nutritious food, improved nutrition, etc. so The Growing Connection may not always be identified as a main player at each site. Some sites have other gardening activities and use other containers than just Earth Boxes and several do not. Most typically sites have the minimum number of Earth Boxes, i.e. ten.

49) **Teaching:** The Boxes are a teaching aid and children can easily engage in planting seeds, harvesting, etc. They like to see the produce and try it. Children in inner city often have little or no awareness of how crops grow. Schools are often also linking the production of salads and vegetables to nutrition education which is generally now receiving much more emphasis in the USA (school meal programmes are moving away from fast food and dispensing machines for fast food are being removed from schools in many school districts). The schools can set up the boxes without having to prepare any gardens and they can go in a play area, on the roof or in a well lit window. So they are convenient. The reservoir means watering is less of a problem in holidays and at weekends than it would otherwise be.

50) There are increasing difficulties in integrating a gardening or growing activity into the compulsory curriculum as children get older and this has been a real problem. Some teachers and parents welcomed the "Connection" aspect of The Growing Connection for the idea of an electronic pen friend in a developing country, but this has not worked because of the lack of connectivity in the developing countries and divergence of age is also a factor as many of the children in the USA are much younger than the majority in the developing countries, where there is also less of a focus on schools.

51) **Nutrition demonstration:** In inner cities an intention of The Growing Connection is a demonstration affect beyond the schools to families to produce fresh salads and vegetables at

home. The evaluation gained the impression that so far this affect had been minimal, but this was purely from anecdotal discussion with teachers, etc.

52) **Outreach:** All those with whom discussions were held were of the view that the “Connection” element of The Growing Connection was weak. For them the first priority was to create a type of mutual support group amongst those schools in The Growing Connection in their immediate area and they did not always know which these were. They also would like connections to be made for them to sources of horticultural and nutritional expertise in their area, rather than having to seek them out individually. There was agreement that part of the problem was that they themselves did not find the time to supply information to The Growing Connection secretariat for newsletters, etc.

53) LOW has a primarily liaison function and probably the awareness created of the existence of FAO as the UN agency for food and agriculture is greatest among teachers and involved parents rather than children, although secondary students may carry some awareness into later life. Perhaps to date some 1,000 people have received a lasting message about FAO from the Earth Boxes in schools, etc. One further place where the some 300 Boxes, sign boards, etc. are prominently displayed is at Google Headquarters which is visited by many prominent figures from the public and private sectors and governments. The USA experience has also provided a focus for World Food Day at the UN in New York where there is usually a Growing Connection display and three years children made a presentation, talked to the Director-General, etc. and this was reported to be a satisfying alternative to speeches.

54) **The Support Network:** In addition to the energetic work by the staff of LOW, The Growing Connection has developed thanks to the efforts of a few committed individuals in the USA who have given of their time and money and made contacts. These have importantly included prominent individual supporters of the programme who have acted as missionaries for it networking with potential donors and private sector sponsors, some volunteers who have been active promoters in individual school districts, the proprietors of the Earth Box who have engaged in training in developing countries and at their Florida base; and academics in horticulture, soils, etc. especially at the Universities of Florida and Cornell who have provided training (formal and informal) and provided a source of reference (the University of Guadalajara in Mexico, is also now part of this group but there is a language barrier). Notably absent has been any technical involvement from FAO, except for an input of guidance materials from the nutrition units.

55) **Mobilization of donors for food and agriculture:** The substantial lasting contribution of The Growing Connection in mobilising donors for food and agriculture has mainly been a contribution to the developing contact between FAO and the Soros Foundation and the commitment of the US Department of Agriculture to fund a pilot schools programme in Angola. A contribution was also made to the orientation of the work by Selva Negra in Mexico which changed from an exclusive concentration on the environment to also address food and nutrition but another causal element in this was the close relationship between the band Maná and FAO.

The Role of the Earth Box in The Growing Connection

56) A central instrument of the Growing Connection is The Earth Box. The Earth Box is a container made from recycled plastic, 30”x15”x12” (76x38x30 cms) with a water reservoir of 2.2 US gallons (8.3 litres) and holding 2.3 cubic feet (0.07 cubic metres) of growing medium. It has a watering tube to the reservoir and in the presence of a suitable growing medium water is available to the plant from below. It is said to have a life of 20 years (although it can break if dropped) and is highly resistant to sun and cold. Advantages, are not all specific only to the Earth Box itself and include that

it has a reservoir to hold water, thus requiring less water and less frequent watering, but also being more labour intensive than automatic irrigation systems; Use of a cover which has a limited life, reduces weeds and conserves water; portability means the box can be moved in and out of shade, greenhouses etc.; The Box can be off the ground and less open to attack by vermin, moles, etc. and marauding farm animals which are a big problem in developing countries; The use of a growth medium reduces labour requirements if work is being done by hand but also means machines cannot be used, it also substitutes for poor soil and can make control of soil borne pests easier.

57) The Box is intended to serve principally as:

- a) An entry point for starting a programme;
- b) A demonstration and sometimes production tool for nutritious food production with limited water, out of season, in the absence of soil, with no hard physical labour, etc.
- c) A point of interest that gets the attention of students and other participants and serves as a teaching aid for plant, growth, human nutrition, etc. and
- d) A common technology which can draw participants together across continents to exchange their experiences.

58) **Entry point for starting a programme:** The limitation as an entry point is one which will dominate this discussion and that is the price. The Earth Box including the growth medium, fertilizer, etc. costs some US\$ 70 in the USA at list price. Participants in The Growing Connection can purchase the full package for US\$ 45 plus shipping and receive a 25 percent discount on inputs. The initial full kit ready to grow of ten boxes is supplied through the Growing Connection in the USA for US\$ 1,000, which includes an initial training visit, a training guide with 46 distinct lessons and covers some of the costs of maintaining the website. In Mexico delivered to the communities using it, it was found to cost US\$ 85 and a figure of US\$ 80 was reported in Haiti. In South Africa where the box is produced locally the commercial cost, excluding transport, was approximately US\$ 33-46 including VAT, depending on the quantity sold. The Lionheart Trust supplies the boxes as a full package to voluntary, charitable and public sector organizations for US\$ 27 each. The initial cost of the Earth Box per square metre of cultivation is thus US\$ 350 in the USA with a unit price of 70 US\$ and 175 in South Africa with a unit price of US\$ 35. Everywhere, it was reported to the evaluation team that it would not be possible to use the boxes without some subsidy (USA) or highly subsidised (developing countries with the possible exception of South Africa). Although there probably are examples, none were reported to the evaluation team, of an end recipient institution or group paying the full price for boxes, including institutions in the USA. The limited number of donors and potential donors (national and international) spoken to stated that the cost of the Box was a major issue for them in supporting The Growing Connection and this limited the number of beneficiaries that could be reached⁷. In the USA the evaluation team did find some examples of middle income parents with children in a demonstration school buying one or two boxes to use at home and there are, of course, commercial sales in the USA and South Africa.

59) The growing medium which must be topped-up each season and renewed every three years or so (12-15 cropping cycles) is a significant part of the capital cost (60% in USA and for imported material, much less in developing countries using locally developed substrates). The Growing Connection has placed substantial emphasis early in the process in developing locally produced substrates and cocoa peat is used extensively and in Haiti sugarcane bagasse was used. This brings down the cost. Trials were conducted extensively on this by the University of Guadalajara in Mexico and by the participating institutions in Haiti, Nicaragua and South Africa where cocoa husk is used (data is available for Mexico in the form of slide presentations).

⁷ E.g. a close associate of the Soros Foundation and Selva Negra

60) **A teaching aid:** The Earth Box is not a teaching aid for reproducible technology in developing countries but it is a convenient way of showing people, especially youth, how plants grow and involving them in planting, watering, harvesting, etc. The Box can be moved around relatively easily, the reservoir reduces its susceptibility to drying, etc. In some schools this has been extended into involvement in preparing food, noting the nutritional benefits of vegetables, etc. As a teaching aid, it is understandable that there will be a cost, but at its present upfront investment cost the Earthbox is beyond the reach of most schools, even in the USA.

61) The novelty value of the Earth Box can make it easier to introduce other new ideas which would not otherwise be accepted. An example is the use of worm castings as fertilizer. The danger is that these ideas may continue to be associated only with the Earth Box. In both developing countries and US cities, people often regard gardening or agriculture as inferior work and the Box provides an entry point which may not be looked on disparagingly. It is probable that this could also be done with an alternative box. A box with a glass side normally covered with a light impenetrable plastic which can be removed to also enable participants to see root growth, water uptake, etc. would have an advantage. This having been said, teachers like the Earth Box as a teaching aid.

62) **A demonstration of how nutritious food can be produced with limited water, out of season, in the absence of soil, with no hard physical labour, etc.:** The Earth Box does provide a focal point for demonstration, but it is a fundamental of demonstration that it should be viably reproducible or should provide an entry point from which elements of the demonstration are taken up independently (e.g. growing vegetables for home consumption).

63) There can be no doubt that with an Earth Box it is relatively easy to produce a crop. However, there is ample evidence that in the absence of intensive training and supervision Earth Boxes will not be properly managed and may not give yields as good as more traditional techniques. The evaluation team saw Boxes producing very well (mostly in gardens with some form of professional management) and Boxes failing. Production is generally easier than in the ground, except where there is plentiful rainfall or cheap irrigation, but the Box is a high investment and outside North America, there have been significant problems with growing medium, fertilizer, and a mix of vegetables suitable to the local growing conditions and tastes. It is probable that only in Mexico has an adequate level of experimentation taken place on these aspects to ensure that fully reliable technical advice can be provided to users and even this is for research station conditions, mostly under plastic or screens in one location. Although poor crops in the ground or in cheap pots or plastic sleeves are a problem, this is less the case than with a heavy capital investment in the form of the Earth Box.

64) There is no production data from The Growing Connection sites. In all countries except South Africa, sites typically have 10-20 boxes, the figure in South Africa is 500, so overall results are more comparable with market garden production. In South Africa the evaluation found that the boxes in comparison with beds (but not other types of boxes or bags) were valued at one site for the reduced labour involved in bed preparation and weeding and avoidance of attack by moles and they reduced the amount of water required. At another site with better soils, good access to water and to sprinkler systems, its own hired labour and fencing and no mole problems, they found the Earth Boxes less productive than their vegetable gardens for all except spinach and did not consider them economical although it was easier to hand clean for cutworm and spinach yield was higher. At a further site, labour saving was appreciated but they did not consider that it would be economic for them to purchase boxes. They would rather purchase local labour, as they had done in order to level the surfaces to place the boxes. They had not received the high yields they had hoped for in the first planting but growing conditions had been harsh (very hot with lots of rain) and they were waiting for

the next planting before drawing definitive conclusions.

65) One academic paper reports results for growing tomatoes and bell peppers in a spring and an autumn season in the Earth Box and production levels compared with production in raised beds covered in polythene with micro-irrigation. The yields were similar, the principal advantages of the Box were that the reduced use of water by the tomatoes and particularly the bell peppers (35.0% and 66.9% respectively). A further advantage was the absence of fertilizer leach into the soil and the disadvantage, apart from cost, was the requirement for a specialist growth medium in the Earth Box⁸. Unpublished production data for individual boxes in University of Guadalajara trials in Mexico, exist for different growth media but no comparison has been done with alternatives to the Earth Box. Further academic literature on the earth box (e.g. Geraldson⁹) addresses efficiency of nutrient use, in the absence of comparative data or costings.

66) The manufacturer's table of costs and returns recorded on the farm of the owners of the technology as distributed by the Growing Connection is reproduced as Annex 2. This appears to totally ignore the investment cost of the Earth Boxes and that the growing medium needs to be periodically replaced and has a cost. It shows that, ignoring these factors, costs of production in the Earth Boxes were 18.7% lower than farm beds under commercial conditions. The principal saving was on labour.

67) While there is commercial production using the Earth Box in the US, the academic literature notes that to date the Earth Box has essentially been something for the home gardener. A theoretical commercial advantage, is that Earth Boxes can be certified for organic production very easily, as with a fresh growing medium in a box there is no question of the previous use of pesticides and fertilizers.

68) For assessing the Earth Box as a viable production technology, what is lacking is comparisons with alternative box, bag and pot technologies and proper costings. The Earth Box does appear to have a reservoir system design which is not found in most other boxes. From the convenience point of view this not only reduces water use but reduces the intervals at which the box must be watered which is valuable in institutions such as schools. Dirty water can also be used if watering is always through the reservoir but this was said to have been a problem in Kenya where watering was also often undertaken from the top, contrary to the instructions.

69) The evaluation did not see any examples of attempts to reproduce the strengths of the Earth Box through alternative means (water reservoir, growth medium, raised off the ground), etc. There was other production of vegetables at several sites. In most, but not all cases, this predated The Growing Connection and was in flat or raised beds, old tyres, etc. using soil.

IV. Conclusions

70) **Relation of The Growing Connection Objectives to those of the FAO Strategic Framework and Medium-Term Plan:** Although The Growing Connection is not strictly speaking an FAO activity, The Organization must assess its support to it in terms of the contribution to the Organization's objectives. As elaborated above the objectives of the Growing connection were concluded to be:

- a) In both North America and developing countries to:
 - i) address nutrition problems through production of vegetables to supplement the diet and through education linked to that production experience,
 - ii) educate people in how plants grow, and

⁸ Alexander A Csinszky, University of Florida Institute of Food and Agricultural Sciences, CIPA International Congress March 1997

⁹ Geraldson C.M. Proceedings of the Florida Soil Science Society, Volume 55, 1996

- iii) improve communication between peoples of different countries around a common “growing experience”.
- b) In North America to further the liaison function by raising awareness of FAO and of the problems of food and hunger in the world and FAO’s role in addressing those problems; and
- c) To raise resources, principally in the USA, to address hunger and malnutrition in developing countries.

71) Among these objectives addressing nutrition problems is clearly in line with Organizational result H3 strengthened capacity of member countries and other stakeholders to address specific nutrition concerns in food and agriculture. The educational objectives may be viewed in this context as part of the total package. However, an emphasis on North America is not in coherence with the overall emphasis on the most disadvantaged globally and the exchange between countries at the level of individual communities, schools, etc. is marginal to the priorities. An unstated but *de facto* objective of extending a technology for production, the Earth Box, assuming that technology to be valid, is in line with Organizational result A1 Policies and Strategies on sustainable crop production and diversification at national and regional levels.

72) Organizational Results X3 Key partnerships and alliances that leverage and complement the work of FAO and partners, is fully supported by the objectives of The Growing Connection in furthering the liaison function by raising awareness of FAO and of the problems of food and hunger in the world and FAO’s role in addressing those problems; and raising resources, principally in the USA, to address hunger and malnutrition in developing countries.

73) The Growing Connection has thus been largely, if not fully, in line with FAO’s objectives and conclusions must therefore be based largely on its effectiveness in contributing to these objectives.

74) **Sustainability:** The whole programme has relied on the dedication and enthusiasm of two staff in the Liaison Office for North America (LOW). There has not been significant involvement or technical support from other units of FAO. In the absence of this LOW support The Growing Connection would cease, unless an alternative institutional model were to be introduced.

75) If The Growing Connection were to be discontinued today, work in Mexico would continue at a similar level to that at present, with some expansion of vegetable production, possibly without the Earth Box. In Nicaragua Fabretto would continue its work in vegetable gardening and nutrition which was initiated prior to The Growing Connection and to which the Earth Boxes have been a useful adjunct. In South Africa, Operation Lionheart introduced its Earth Box programme before making contact with The Growing Connection and will no doubt continue it. In both South Africa and Mexico the continued sustainability at the level of the local institutions or communities will in all probability be very mixed. In North America some schools would continue to use the Earth Box. It is unlikely that any networking would remain.

76) **Role of the Earth Box and micro-garden technologies:** The Earth Box is central to the present strategy of The Growing Connection but it is a proprietary technology and its owners have donated subsidised boxes. The Growing Connection and by association FAO is strongly promoting a proprietary technology which has not been systematically analysed against competitors and is generally too expensive to be a viable option in developing countries or even North American schools without subsidy or donations. The lack of involvement of FAO horticultural specialists as has meant that the Growing Connection was not able to draw on the increasing FAO experience of a range of micro-garden technologies.

77) Addressing nutrition problems through production of vegetables to supplement the diet and through education linked to that production experience: As is evident from the discussion above The Growing Connection has had some limited impact on vegetable production and nutrition. This has been most evident to date in Nicaragua and Mexico. Only in Mexico was this a new message for the charity and university involved.

78) Educating people in how plants grow: Teachers like the Earth Box and it does make it easier to teach the basics of plant growth than a bed in a garden. It is also more easily accepted than the physical work of a garden as well as requiring less time. The Box is not however unique in this respect and as a purely educational tool, may not be the ideal.

79) Integrating production and nutrition in an educational approach: The Growing connection has brought together nutrition and production in an educational outreach which has some similarities with Farmers' Field Schools. This has been a strength in comparison with those programmes which have tended to emphasise either production or nutrition in isolation from the other. In this context the nutrition units in FAO (AGN) note "While school gardens can have the potential to supplement children's school meals, this is usually the case in larger programmes only where gardeners, parents and community members are able to assist in food production. Generally though school gardens should not be designed to produce bulk food for children (or replace feeding programmes) as children cannot be realistically or ethically be expected to produce significant amounts of food, feed the entire school, or make a marked impact on their health, just through school gardening. A first policy decision is therefore to prioritise educational goals for children's garden activities. AGN experience suggests that this is best done through national education and/or school nutrition programmes that have the potential for greater outreach and up-scaling once locally appropriate technology options and educational methods and materials have been tested".

80) Improving communication between people's of different countries around a common "growing experience" using common technology: This aspect of the programme has not taken-off in any meaningful way and is not a priority for either developing country or North American participants, who see little value added in it. There is a demand in North America to link institutions in the same locations with each other and with technical support. The technical support network based on committed individuals in US institutions is appreciated, especially in the developing countries but this network suffers from the non-involvement of FAO technical personnel and inadequate knowledge of specific developing country situations.

81) Further the liaison function of LOW by raising awareness of FAO and of the problems of hunger in the world and FAO's role in addressing those problems: The Growing Connection does raise awareness of FAO in the USA, but, as discussed above, the lasting impact of the schools' programme on public opinion in this regard is likely to be low and even less on awareness of the issues of hunger and malnutrition in the developing world. The weakness of the "Connection" element of the programme has meant that the exposure to developing country issues has not been great and it can be questioned what overall understanding of FAO's mission is presented by the relatively sophisticated Earth Boxes, which in the US have an image of terrace gardening. The evaluation was unable to answer the question of opportunity cost for LOW. Whether greater results for FAO's mission could have been obtained by investing all or part of these resources in alternative liaison activities is difficult to say as it was not evaluated but in view of the limited impact, it does appear likely that this would have been the case. However, it should be noted that FAO managers concerned at the time considered that the senior liaison officer post was relatively ineffectual prior to its reorientation first to support the Groundworks series of concerts and then The Growing Connection. It is also reported that an alternative or additional programme of activities was never

suggested for the Liaison Officer.

82) Raising resources, principally in the USA, to address hunger and malnutrition in developing countries: The Growing Connection has provided a point of entry for discussions with the US private sector and Foundations on funding for developing countries. There can be little dispute that a tremendous amount of energy has gone into this. Rather little has as yet yielded concrete results, but the Soros Foundation, in particular, remains interested. The evaluation found that many of the Foundations require refined project proposals, including such information as comparative data on production levels from Earth Boxes and information on how projects would become sustainable. Such project proposals had not been developed and information available was publicity material.

83) The US Committee for FAO has largely acted as a conduit for funds for the Growing Connection activities and some other donations to FAO projects. It does not have a staff and does not currently have a mechanism in place to cover its expenses. The earlier fund mobilization strategy and menu of purposes to which donations could be put has not been maintained and there is no website or well publicised mechanism for contributions from the general public.

V. Recommendations

84) FAO has invested over US\$ 2 million in the Growing Connection over the last six years. In addition many volunteers in North America and beyond have given heavily of their time and effort. There have been results from this and some basis has been potentially laid for further developments, but major decisions now need to be made by FAO in line with its Results Based Framework in order to cost-effectively optimise on this effort or simply to encourage those ongoing programmes which are sustainable to continue under their own momentum and redirect the resources of LOW currently focused on the Growing Connection to alternative well defined priority purposes.

85) Recommendation 1: The results of The Growing Connection in developing countries should be judged on their own merits. The Earth Box at its current start-up investment costs is not a viable technology for low income households and communities in developing countries. It may be viable for urban household production in developed countries and by the middle classes in developing countries but cost remains a disincentive. As a school teaching aid, it can be useful, especially for developed countries, but even here cost is an issue. There is however, an interest in and need for production of vegetables and salads in containers, which can be easily moved, raised off the ground, need less water, reduce heavy labour, especially for children, HIV-AIDS victims, etc.

- FAO as an institution needs to be able to offer a wider range of validated, costed and documented micro garden technologies, including options for boxes, etc. which can be adapted to local situations than appears to be the case at present. Such options need to include non-proprietary technologies which allow the containers to be produced locally (and in addition to boxes may include: polythene bags and sleeves, old tyres and buckets, baskets, pots, etc., etc.);
- FAO as an institution needs to consider if there are lessons from The Growing Connection to be integrated in its mainstream programmes, such as those for National Food Security in conjunction with urban and peri-urban horticulture. In particular the integration of nutrition and production together with an educational approach has value and this is reflected in FAO's documentation and guidelines for nutrition and gardening.

86) Recommendation 2: The Growing Connection is making a contribution to the huge movement in the USA in favour of healthy eating and local production, but its contribution is not substantial or unique and this work is not fully in line with FAO's strategic objectives. The work is having some

impact on public opinion with regard to developing country food and hunger issues and the role of FAO, but this impact is small and the Earth Boxes may provide a misleading impression of FAO's mission.

- FAO needs to decide whether the resources of LOW should now be invested in alternative or modified liaison activities which might potentially achieve greater impact, especially at decision making levels and with audiences with possibility for multiplier effects including academia and the media.

87) **Recommendation 3:** While generally in line with FAO's overall objectives and now running sustainably in three developing countries, The Growing Connection work is presently a charge on the Liaison budget, reducing the capacity of LOW for other priorities. Taking account of the encouraging, but modest results to date and their sustainability:

- Direct work in developing countries by LOW can be allowed to wind-down. Some of The Growing Connection activities may be selectively taken up in modified form under appropriate FAO programmes, such as that for National Food Security. They may also become in a modified form an element in the programme of the US Committee for FAO (see Recommendation 4 below).

88) **Recommendation 4:** The US Committee for FAO (incorporated under US law as a 501(c)(3) Corporation) has become almost dormant and its potential to mobilise resources for fighting hunger and malnutrition has remained largely unrealised and questions remain on what potential there really is. The US is a crowded and competitive market but it is also by far and away the biggest single resource for private philanthropy. As recognised in the TeleFood evaluation, active support for an Organization (FAO) is also frequently mobilised when it is linked to giving and the givers feel a sense of ownership. Giving extends the image of an organization.

89) In a time-bound trial effort:

- The US Committee for FAO should be reconstituted with a broader membership, possibly including some of the major supporters of the Growing Connection;
- A time-bound, targeted but flexible strategy and business plan/project document should be elaborated in detail for a 3-4 year effort to re-launch the Committee (Corporation) as a fully functioning, free standing body in accordance with its By-Laws, creating awareness and mobilising resources and undertaking a charitable and educational strategy for increasing food production and access to food in line with its Carter and, principally for projects to be undertaken in the overall framework of FAO. This strategy should include:
 - Without losing focus, a wider perspective of FAO's mission than that provided by the Growing Connection, through an increased menu of opportunities for contribution, including to FAO National Programmes for Food Security, emergency programmes and environmental action,
 - the development of specific projects for potential financing by Foundations, etc. These may include a modified form of the Growing Connection, taking full account of the findings of the evaluation,
 - As a priority, a functioning web-site with the possibility for contributions should be put in place; and
- FAO should kick start this effort by making a grant for two years to the Committee. This should be in cash, not in the form of human resource support, thus allowing the Committee to immediately make progress in becoming a free standing entity. At the same time an early effort should be made to locate additional voluntary contributions to supplement the FAO grant.

Annexes

Annex 1: Purposes of the US Committee for FAO

- 90) To operate exclusively for charitable and educational purposes
- a) To provide financial assistance for projects to aid the rural poor in developing nations, particularly projects to increase food production and access to food;
 - b) Inform the American people of (a) the need to raise levels of nutrition and standards of living and to improve agricultural productivity in developing nations, and (b) the role of international organizations in addressing these issues;
 - c) Initiate, develop, support, establish and run educational and awareness programmes in the Unites States and elsewhere regarding the living conditions of many rural populations throughout the world;
 - d) Solicit and receive funds and other property for the purpose of providing assistance to achieve these objectives.

Annex 2: Manufacturers Data on Earth Box Costs and Returns



EarthBox[®] Farm Production Analysis:

Cost and Production Comparison

	U of F '04-'05 Dbl. Crop Average	In-Ground Florida Farm	In-Ground Florida Farm	EarthBox 2057 Per Acre 3' x 6' Spacing	EarthBox 2057 Per Acre 3' x 6' Spacing
		SPRING	FALL	SPRING	FALL
OPERATING COST					
Cartons per Acre	1,100	1,400	980	970	1,255
Transplants	320	320	320	365	365
Fertilizer	540.50	500	500	400	400
Fumigant	618.75	618.75	618.75	0	0
Fungicide	356.65	356.65	356.65	342	342
Herbicide	39.41	39.41	39.41	30	30
Insecticide	546.86	546.86	546.86	500	500
General Farm Labor	181.61	181.61	181.61	181.61	181.61
Machinery Variable Labor Cost	760.25	760.25	200	152.05	152.05
Tractor Driver Labor	365.94	365.94	365.94	183	183
Scouting	35	35	35	35	35
Stakes	96	96	96	21.94	21.94
Plastic String	100	100	100	100	100
Plastic Mulch	315	315	315	571.39	0
Tie Plants	145.20	145.20	145.20	145.20	145.20
String & Stake Disposal	199.65	199.65	199.65	100	100
Farm Vehicles	27.33	27.33	27.33	27.33	27.33
Interest on Operating Capital	244.02	244.02	244.02	244.02	244.02
Total Operating Cost	\$4,892.17	\$4,851.67	\$4,291.42	\$3,398.54	\$2,827.15
FIXED COSTS					
Land Rent	300	0	0	0	0
Machinery Fixed Cost	281.08	281.08	281.08	240	240
Farm Management	627.51	627.51	627.51	627.51	627.51
Overhead	1,045.85	1,045.85	1,045.85	900	900
Total Fixed Cost	\$2,254.43	\$1,954.44	\$1,954.44	\$1,767.51	\$1,767.51
Total Preharvest Costs	\$7,146.60	\$6,806.11	\$6,245.86	\$5,166.05	\$4,594.66
Cost per Carton for Production	\$6.50	\$4.86	\$6.37	\$5.35	\$3.66
HARVEST & MARKETING COST					
Tomato Cartons	825	825	577	572	740
Selling	165	168	118	116	151
Pack	1,815	2,030	1,420	1,406	1,820
Harvest & Haul	880	880	617	611	790
Organization Fees & Assessments	99	99	99	99	99
Total Harvesting & Marketing Cost	\$3,784.00	\$4,002.00	\$2,831.00	\$2,804.00	\$3,600.00
TOTAL COST	\$10,930.60	\$10,808.11	\$9,076.86	\$7,970.05	\$8,194.6
PRODUCTION BINS/ACRE (28 CARTONS PER BIN)					
Fall	30		35		45
Spring	30	50		35	
Water Use per Acre Inch/Two Crops	7	28		8	

Annex 3 Terms of Reference of the Evaluation

Introduction

FAO's North America Liaison Office (LOW) has been engaged since 2002 in an initiative called *The Growing Connection* that arose out of a desire to engage non-traditional partners in North America in support to communities of poor isolated beneficiaries in the developing world and connecting them with similarly deprived communities in the USA, while raising awareness of what FAO does, as well as making a substantive contribution to hunger alleviation and better nutrition.

It has done so through an arrangement with the United States Committee for FAO, a not-for-profit corporation established on 4 August 1997 for the charitable and educational purposes stated in its Articles of Incorporation. The Committee has tax exempt status and donations are subject to tax deduction in those US states where it is registered. Management and coordination of the programme is carried out by FAO staff in Washington who provide oversight and work on the development of new activities, which are all funded by external sources and implemented by partners in the field.

The Growing Connection has been the largest project of the United States Committee for FAO and the most sustained outreach effort of FAO's North America Liaison Office. This is an opportune time to examine how it has performed and what lessons can be learned. Equally important is a look to the future, within the context of FAO reform, to increased interest in urban agriculture and nutrition and food security challenges, and other changes that may have an impact as it goes forward.

Background

The Growing Connection (TGC – www.thegrowingconnection.org) is a grass-roots initiative coordinated by the FAO Office in Washington on behalf of the United States Committee for FAO. TGC operates across the USA and in a number of countries overseas, with two principal sets of activities:

- 1) Intensive horticulture: TGC introduces an earth box and at schools, clinics, community centers – essentially engaging people (primarily youth and women) in high intensity urban production of vegetables, and,
- 2) Communications: TGC encourages all participants to document their activities and to record / share their work within a network of communities who are, together, engaged in “do-it-yourself” solutions to chronic malnutrition.

The objectives of TGC can be seen on two complementary levels:

- 1) Functions, operations and output directly in terms of the participants – with benefits to their engagement in this project, and
- 2) TGC as a means to build awareness of and engagement in issues/solutions to hunger, malnutrition and sustainable agriculture.

The Growing Connection was initiated by FAO Washington in 2002/03 at the request of the Director-General, as a “functional” way to engage the US public (people, institutions and community groups) and the private sector alongside FAO, and to make use of the field operations experience of a member of the FAO office in Washington.

TGC now includes some 130 garden/farm sites in 12 countries. It receives support from FAO for the coordination activities (office space, personnel, communications, travel, etc.). However each operational site of TGC is either self-financed by the host (school, after-school program, clinic, etc.) or funded by money raised and channelled through the United States Committee for FAO.

As outlined above, The Growing Connection has a number of unique features that have influenced its development. It is designed as part of the Washington FAO Office’s liaison function but carried out through on-the-ground operations with a network of partners. The idea from the beginning was to go beyond the normal meetings and information dissemination work and expand into concrete activities with local communities and with funding from the private sector, and in particular from the IT industry. The work is carried out largely by local collaborators who work on nutrition and intensive horticulture projects, with guidance from TGC and local volunteers, and who exchange experiences and ideas with others, often in other parts of the world, through IT-based linkages.

The US Committee for FAO is a not-for-profit organization that incorporated as a 501(c) 3 corporation. This allows for donations to be considered as an income tax deduction and makes The Growing Connection an initiative of the US Committee operated by FAO on its behalf, but not an FAO project.

Questions for the Evaluation

There are three main questions to be addressed by the evaluation

- Does The Growing Connection promulgate a cost effective and sustainable model which is having an impact in improving lives in developing countries and in the USA and Canada?
- Has TGC been a good use of FAO resources within the context of LOW’s liaison function for the USA and Canada – does it effectively advocate for the importance of food and agriculture for developing countries and for FAO’s role in addressing the issues? and
- What are opportunities and the limitations for the future provided by the institutional architecture, including the community of practice, and by the technical model offered by the TGC.

In addition to these large questions, there are a number of practical issues that would benefit from an external assessment. They include the following:

1. The combination of FAO-provided coordination and externally-funded and implemented local activities: Management and coordination of the programme activities are provided by a P-5 Senior Liaison Officer and a G-4 Liaison Clerk, who dedicate the bulk of their time to TGC. All “project” funds come from outside external funding. The arrangement of FAO coordination and networking, as part of the Office’s liaison work, along with fundraising and private donations for

field activities has allowed the effort to go forward. This represents a significant investment by the Organization, amid other potential competing demands. As FAO moves toward a staff rotation policy the P-5 post is likely to turn over with some regularity. Is the current model the best one for the future?

2. The US Committee as the owner of the project: While TGC has been successful in attracting funding for project activities, there are significant fixed costs for maintaining the Committee. To maintain it as a legal entity the Committee must be registered in the District of Columbia and have a business license. To raise funds in individual states it must have annual state registration. As a not-for-profit corporation the US Committee must purchase annual insurance against lawsuits for its board of directors, and it must present certified financial audits. The audit had been performed on a pro bono basis by the local audit firm of LOW, but as no local audits are now contracted by FAO, this option is no longer viable and the Committee is looking into alternatives. The annual maintenance cost of the US Committee runs somewhere between US\$ 10,000 and 20,000, depending on the cost of the audit. These costs must be covered from the contributions received by the Committee and clearer arrangements with contributors, including TGC, to cover these costs must be made. Is there a better model for ensuring that these costs are covered even if contributions to the Committee are earmarked for projects such as those carried out by TGC.

3. While no specific technologies were identified at the outset, criteria for their selection looked for those that were relatively low cost, dealt with some aspect of agricultural production and household nutrition, and that were sufficiently simple and relatively uniform so that groups working in much different contexts could be successful in carrying out the activities and be able to share common experiences. The main technology used by the project is the Earth Box. This is a patented technology of plastic containers, covers, planting medium and instructions, sold by the Earth Box Corporation that requires very little space, can be set up almost anywhere and is nearly foolproof in allowing participants to produce vegetables. There are however, questions about the extent to which this technology is sustainable and economically viable. The technology was cleared early on by AGP with caution but was not meant to be seen as being endorsed by FAO in a marketing sense, but some confusion on this point may creep in. This gives rise to two questions:

- How can the public-private nature of this relationship be most effective in the future? and
- Does the technology communicate a message fully in line with FAO's goals and likely to be sustainable for poor urban communities?

4. The project has operations underway or introduced in 12 countries: the US, Mexico, Nicaragua, Haiti, Canada, Ghana, South Africa, India, Dominican Republic, Morocco, Rwanda and St. Lucia. (See Annex 3), with possible new project funding for Liberia and Angola. It is important that the projects are seen as being implemented by partners and through the US Committee, rather than as FAO projects. Given FAO's well-defined procedures on government requests and project approval, it is important to keep these identities separate. The work on the ground is designed to have an impact on household nutrition and income of the participating families—in addition to the awareness creation and educational aspects of the activities. How these two functions interact and how they relate to FAO activities in the country are interesting

issues for review and discussion, particularly in light of the IEE recommendations on partnerships, knowledge management and networking.

5. The GCT's Earth Box technology has proved most appropriate to urban settings and this, has coincided with increasing emphasis on locally-produced food and the "locavore" movement in developed countries and with heightened global attention to issues of hunger and nutrition. How can The Growing Connection position itself to best take advantage of this new interest and the new opportunities.

Evaluation Team, Timing and Programme:

The evaluation will be carried out in April/May 2010. The core team will be composed of two main consultants and two supporting consultants:

- The team leader who will draw together the findings of the team as a whole, address overall institutional aspects, including advocacy and fund raising and will synthesize the analysis of developing country experience;
- A communication specialist who will in particular address the functioning of the community model and will examine north-south networking and exchange;
- A consultant who will review the experience in South Africa, in addition to the reviews of programs in Nicaragua and Mexico reviewed on the ground by the other two consultants; and
- A horticultural specialist who will review the technical and economic viability and sustainability of the Earth Box in comparison with other technologies.