DISCUSSION PROCEEDINGS

GARDEN IN A SACK

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I. GENERAL INFORMATION

Duration: 10. 07 -

Number of participants: 11

Number of Contributions: 16

II. INTRODUCTION OF THE TOPIC

Following shortages after the post election violence that hit Kenya early that year and to face soaring food prices of food stuff, Solidarites, a French relief NGO has implemented a "sack **garden" project in the largest slum of Africa**.

In Nairobi, 60% of the population lives in the numerous slams located around the city. Kibera slum is one of the 146 slums of the capital of Kenya. Around 1 million of people are currently living in Kibera and the population is increasing day by day. In the slum, land slides are frequent and the unemployment rate is very high. Most of the land is dedicated to the houses and the agricultural land remains scarce.

In December 2007, Kiambu and Kibera slums are knocked by the post election violence that hit Kenya in early 2007. These riots are the result of different compounded factors that are worsened by the level of poverty and increasing vulnerabilities. Most of the families living in the slum have recently settled in the slum, leaving the overpopulated rural areas. The inhabitants of the slum do have the appropriate know-how to crop vegetables, the main problem is the lack of land and the cash to buy the agricultural incomes.

The project implement by the French relief and reconstruction NGO Solidarites has implemented a small scale agriculture project. This project funded by the French government involves planting vegetable seedlings on the sides of earth filled sacks that are place on rooftops or doorsteps.

Each family has been given one to three sacks filled with earth and 6000 families are now cropping tomatoes, onions, kales or spinach. A nursery has been established in the slum. Some people are in charge of the management of the nursery whereas another group is in charge of training the beneficiaries.

Each sack is 1m3 wide which represent 5 m2. One single sack can contain 50 seedlings of kales or spinach and 20 tomatoes plants. Vegetables are used directly and indirectly by the household to obtain food, access cash when needed and educate children In average, each household increase its weekly income of 5USD. Given the fact that in Kibera the rent of the house cost around 6 USD/month, this income is an important source of income.

People living in urban areas are the particularly vulnerable to soaring of food prices. The engagement in urban food production is beneficial to low-income households. Solidarites strongly believe that urban agriculture should be one of the pillars of the food security strategy in the coming years. When the main limiting factor is the lack of land, to have a garden in a sack is a great opportunity.

Solidarites is currently looking for possibilities to replicate the same kind of projects in others slums in Nairobi and also in other countries.

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III. LIST OF CONTRIBUTIONS

Contribution by Brian Thompson, FAO's Nutrition and Consumer Protection Division

I read with interest your post on the FSNForum webserve regarding the use of sack gardens in Nairobi slums.

I would therefore like to bring to your attention the "call for papers" that the Nutrition and Consumer Protection Division of FAO has issued seeking contributions for inclusion in our publication Food based strategies for combating micronutrient deficiencies. The publication will focus on practical actions for overcoming micronutrient deficiencies in a sustainable manner through increased access to and consumption of adequate quantities and variety of safe, good quality food. The publication will gather a variety of relevant advocacy and technical material under one cover to encourage and promote further attention to and investment in such activities. If you would be interested in writing up your experiences in Nairobi and/or elsewhere which demonstrate that food based approaches can make a measurable difference to people's food consumption and nutrition and having your paper published in our publication please advise us.

Thank you in advance for your attention on this matter, and we look forward to hearing from you soon.

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Contribution by George Kent, University of Hawai'I, USA

Peggy, have you considered having sack gardens in schools, linked to school feeding programs? The schools would be good sites for teaching about them, for students and also for adults.

Has anyone done systematic research on sack gardens, especially to analyze their advantages and disadvantages compared to conventional gardens?

Maybe some agencies could help in documenting sack garden experiences. And maybe someone somewhere could create a website to distribute information about them?

Aloha, George
Professor George Kent
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Honolulu, Hawai'i 96822
USA

Contribution by Peggy Pascal, from Solidarites, Nairobi

Dear George,

Thank you very much for your contribution and question. The sack gardens project in Nairobi was actually a pilot project for Solidarites. We wanted to test it and get the main lessons learned before trying to replicate it. We are now trying to share this idea and see how we could replicate it in new context. The idea of developing sack gardens in schools seems indeed a good idea. This project makes sense when the first limiting factor is arable land. The good thing in having the garden in a sack is that you save water and you can put the sack wherever you want….

I would be very interested to know whether other organizations have developed sack gardens also.

Thanks,

Peggy

Contribution by James Wirth, from the Global Alliance for Improved Nutrition

Dear Peggy,

I agree with George that if there hasn't been any systematic research on these sack gardens, it would be great to incorporate that into your next project. I read of sack gardens once before in Field Exchange which talks about an Action Against Hunger (AAH) project in Uganda.
Here is the link - http://www.ennonline.net/fex/26/fex26.pdf

Best of luck,

James Wirth
Senior Associate, Performance Measurement & Research
GAIN – Global Alliance for Improved Nutrition

Contribution by Poonam Pande, from GTZ India

Dear Peggy

Warm greetings from Sustainet India.

Its really interesting to know about the sack garden project. I just wanted to tell that in India, the Government is running a programme called mid day meal schemes for the school going children for the government school and they are provided with the food as specified by the Government rules. Some of the schools have initiated vegetable production in their school premises to add the vegetables in the mid day food. This will help in adding the essential nutrients and vitamins to the food that is provided to the children. As I was thinking, where there is no lands available in the school premises they could start vegetable production by using Sack techniques. I would like to seek your advice and more information on the topic.

Warm regards

Poonam

Dr. Poonam Pande,
Senior Technical Expert, Sustainet,
GTZ,
New Delhi - 110 048, INDIA .

Contribution by Shaikh Tanveer Hossain, from Bangladesh

Regarding the message from Dr. Peggy Pascal regarding on “Sack Garden “ project is a very interesting and has high impact on current food situation in different countries. Currently in Bangladesh around 60 lakh (6 million) people are living at different slums in the capital Dhaka. The main features of these slums are…

1. The overall level of livelihood security is poor and has a complex mix of urban and rural lifestyles.

2. Most men are employed and a certain percentages of women are working outside the home.

3. Many women skip meals each day to make ends meet. Families also have a poor intake of protein-rich foods and little dietary diversity. Overall, intake of protein-rich foods (such as meat, fish, and eggs) is lower.

4. A higher percentage of children under 5 years old are malnourished and a major group of women are also malnourished.

5. Hardly anyone has access to a registered physician due to economic reasons indicating greater risk and consequently poorer health security.

6. A lack of basic services such as water, sewerage, drainage etc.

7. High densities, poor living environment, low literacy rate and little attention from the government.

A fewer number of development activities has done on slum improvement in Bangladesh. Within these activities mostly concentrated on basic services, health programmes (immunization. ORS, Vitamin A) and water and environmental sanitation programmes.

Small scale agricultural activities not yet get attention in these urban slums though it has high impact for the livelihood improvement in the poor community.

Recently, likewise other countries Bangladesh is also facing the problem of high food price. Recently, all kind of foods (cereals, vegetables etc) price has increased and becoming alarming. Small scale homestead vegetable program can be a very good option to improve the curent food crisis situation and as well as to improve slum community.

It will be highly appreciable if Solidarites is come forward and initiates some programmes in Dhaka and other big cities urban slums of Bangladesh to improve the livelihood of the community. In this regard, I will be happy to share and cooperate with Solidarites.

Sincerely Yours,

Dr. Shaikh Tanveer Hossain

Contribution by Raul Varela, from Mozambique

Under FNPP programme (FAO-Netherlands Partnership Programme), we tested the initiative in Gaza for almost six months with tomatoes, lettuce, green pepper, spinach, cabbage, beets, parsley, turnip, onion, etc. Among other things, we concluded that:

1. High and good quality production even past normal production season
2. The incidence of plagues and weeds are almost none
3. Much less time spent in different agricultural tasks
3. Saving on water is quite impressed

4. Overall production is very good. I believe that about 10 bags might be enough to feed a family

The experiment was conducted at FNPP office, a center where various NGOs, Civil Society, Government staffs come for either meeting or training and the rate of adoption was amazing, particularly in the Northern Districts where drought and chronic malnutrition are a fact. In our view, such technology show very good comparative advantages (See brochure produced by us).

Our next step was to conduct a true research on this and, in fact, before the program closed, FNPP was financing a university student thesis to carry out further analysis. Among other things, I think that one should look at the following:

Test for water stress

1. Set up a normal irrigated plot
2. Set up sacs with different types of vegetables
3. Look at irrigation and level of stress by using different intervals for putting the bottle in: in Gaza, we found that, during summer time, one may irrigate with two bottles (1 litter each) every three days without any problem.
4. Compare the final result (production) against different intervals.

Final results: Find the optimum level to recommend intervals for irrigation.

Labor Saving

1. Set up a plot under normal conditions
2. Calculate time spent in each activity
3. Ellaborate a farm budget
4. Do the same thing for the sac production
5. Compare the results

Final Results: Look at labour saving and other input vis-a- vis to production

Socio-Economic Analysis

1. Look at minimum consumption requirement for vegetable
2. Based on local price converted such minimum consumption in value
3. look at how much an HH, in average, should spend
4. Test how many bags could produce the quantity needed
5. Do a farm budget
6. Compare the saving

Nutritional Perspective and Food Aid Intervention

1. WFP is currently providing food aid (free distribution and FFW)
2. FFW could be tied to the production in sac (maize comes in bags that can be used for the program)
3. Do free distribution and ffw as are currently done
4. Pick up a sample of HH and engage them in producing vegetable in sac under FFW
    a. provide seeds to women and teach them how to do nursery
    b. Use small plants to distribute to the most vulnerable groups
5. Monitoring what they do with vegetable
6. Compare their nutritional status with others under normal program

It is amazing what you can do with this initiative and that is why many NGOs have taken on such initiative. It is really a pity that FAO did not pursue to empower such initiative and to disseminate it

further.

In the same line, there is another initiative also tested in Gaza that might be considered by the colleagues. It has to do with Moringa, an Indian native plant with high nutritional value and very powerful to purify water. FNPP tested it in Gaza and the results were also quite impressed. Even thought I am not currently linked to FAO, I am willing to consider cooperating with any program/project to integrate these various types of simple and cheaper technologies that can be easily made available to the grass root people.

FOR FURTHER INFORMATION, YOU MAY CONTACT FAO MOZAMBIQUE THAT MIGHT BE WILLING TO SHARE WITH YOU VARIOUS BROCHURES AND PAMPHLETS PRODUCED UNDER FNPP.
YOU MAY ALSO CONTACT KOSTAS STAMOULIS TO PROVIDE YOU WITH ADDITIONAL INFORMATION.

Cheers
RV

Contribution by Lori Bell, from the FAO's Evaluation Service

Dear Colleagues,

Adding to the contribution of Raul Varela, the other advantage of the sack gardens is that they have low physical requirements and thus have been considered to be a potentially appropriate intervention for households with low adult labour ratios (i.e. child and female headed households, elderly headed households, households with chronically ill adults). A group called CL4 in South Africa has used sack gardens for households with family members ill with HIV/AIDS. I would be very interested in hearing experiences of colleagues in **promoting gardens in a sack for particular vulnerable groups**.

Lori Bell

Contribution by Peggy Pascal

Dear Dr Poonam Pande, James Wirth and Shaikh Tanveer,

Thank you very much for your contribution. We are very happy to get so many answers and questions from different parts of the world regarding our project in Kibera. If this experience can give ideas to different organizations to implement this kind of projects it is a good news.

Regarding the question of DR Poonam Pande, I believe that garden in a sack would be very appropriate for schools and school garden, the technique of the sack has two advantages: cropping without land and have an easy management of the water resource. We are currently working on gathering documents and knowledge on this type of experience and we will publish a technical paper in the coming months. I would be very interested to have your feedbacks if you decide to test this approach in schools.

Could you please send me your email address?

Regarding the email posted by James, yes we are aware of the project implement by AAH in Uganda and we are currently in touch with ACF in different countries to see how we could work together and share our experiences.

Lastly, regarding the third email, our team in Dhaka would be very interested in testing a similar project in the slums of Dhaka. Could I please get your personal email address. The head of mission would be very happy to discuss that with you.

Best regards

Peggy PASCAL

Référent sécurité alimentaire et évaluatrice

Solidarités

Contribution by Poonam Pande, from GTZ India

Dear Peggy

Thanks for your reply. In fact I would like to discuss the same with my steering group and we can test the approach in the schools. For other modalities I would like to invite you for further discussion. I am attaching my email as: poonam.pande@gtz.de, poonam.pande@gmail.com.

Hope to hear from you.

Warm regards

Poonam.

Contribution by Shaikh Tanveer Hossain, from Bangladesh

Dear Dr. Peggy Pascal,

Thank you very much for your positive and encouragement response. It will be very nice if I could discuss with your team in Dhaka about sack garden project. For your kind information, I am serving as a Manager, Agriculture and Marketing Division in a national non-governmental organization in Bangladesh. I am interested to implement such type of potential technologies in the slum areas. We have several projects on agricultural, health and for street childrens in the urban and rural areas of Bangladesh. Earlier I was served in Bangladesh Rice Research Institute almost 14 years as senior scientific officer. My personal e-mail address is tanveer107@yahoo.com and telephone number is 01730026955 or 01817618734. I'm waiting to hear from your team in Dhaka.

With Thanks and regards,

Dr. Shaikh Tanveer Hossain

Dhaka, Bangladesh

Contribution by Juliane Friedrich, from the World Vision Germany, Germany

Dear All,

As former implementor of garden sacks or Multi-Storey Gardens as we called them I would like to add some information to the topic. WFP and its implementing partner successfully implemented Multi-Storey gardens in the two Kenyan refugee camps in Kakuma and Daadab. The Multi-storey gardens were supposed to address the challenges created by the encampment policy for refugees in Kenya which did not allow them to engage in agricultural activities outside the camp, the limited space inside the camp, scarcity of water, security concerns for women moving outside

the camp, and the limitation of the WFP food basket with regard to fresh and micronutrient-rich food. Several Thousands of refugees participated in the programme. One has to note, that this type of programme is suitable for areas with similar challenges but will hardly compete with conventional kitchen gardens in areas where these are feasible.

Contribution by Silke Pietzsch, from Action Against Hunger USA

Dear Micro gardening friends,

I would like to add another example to this gardening discussion:

ACF-USA has another example to add to this discussion. The promotion of micro gardening in small bed-, tyre- and sack- form has been facilitated in the IDP camps in Northern Uganda. Due to problems with access to land caused by insecurity around the IDP camps, ACF has been promoting small scale and small space gardening systems. The production has been very significant contributing to the households' food and consumption, as well as to the households' income through sale in the IDP camps. This activity has been promoted as component of an integrated nutrition- water- food security project in the North of Uganda. The results of the programme show, that even on a small space there is a big potential for vegetable production, and therefore an enhancement of the dietary diversity and influence on the nutritional status of the population.

For more information and programme documentation, contact Silke Pietzsch (sp@aah-usa.org)

Silke Pietzsch

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Contribution by Dilnavaz Variava, from India

Dear Raul Varela,

This is fascinating information. I am chairman of the rotary club of Bombay's rural development and organic farming committee and also a trustee of a school for 3800 low income village children from 18 villages and also of a small school for tribal children. Please do send me the email contact of the FAO person and any information you can so that I can get some of this implemented in project form.

I have an interest in starting vocational training schools in organic farming and rain water harvesting so if there is anyone who can help us please let me know.

Regards,
Dilnavaz Variava

Contribution by Raul Varela, from Mozambique

Dear Colleagues!

It is clear that the discussion related to vegetable production in sack has been very fruitful. Overwhelming reaction was that indeed there is value added in this approach. Among other

things we could agree that **the techniques can be applied to the following conditions**:

- Place where there is shortage of land.
- Places draught prone with a very critical shortage on water conditions
- Very attractive and efficient to address vulnerability intervention.
- Excellent approach to complement school garden initiative, improve hh income and to address gender issues.
- Very appropriated to complement any community development initiative and or emergency program, and
- Most of all, very powerful to help overcome current food crisis with immediate impact and much appropriated to the grass root people.

Having said that, the issue is what next. We are running out of time and time gap between discussion, strategies and action can be critical to save lives, particularly under current conditions. Thus, let us move on. My **suggestion to FAO** is as follows (the same could be applied to other organizations):

- Agree in principle that indeed FAO should support the broader dissemination of such technique
- A concept note should be prepared underlining the overall strategies
- Following that, instruction should be given to various programs/projects under FAO
- Partnership, particularly with WFP, NGOs and Civil Society is a must
- Finally, while we are promoting such initiative we should conduct the following activities:
- Conduct on farm trial to have a better understanding of water saving under vegetable production in sacks compared to normal production.
- Analyze yields from sacks compared to normal production
- Number sack needed per hh, taking into account production and consumption needs.
- Sócio-economic analysis of importance of production in sacks
- Possibility of tying water purification (using moringa) to the availability of water for production in sack in the dry land.
- Set up approach to integrate production in sack into HIV program, genders, and environment where there is shortage of labour.
- All these line of research can be done in six months period and should lead to the production of various brochures to feed into the initiatives foreseen under points 1 an 2.
- Define clear leadership to promote such initiative within FAO. Such leadership should be exercised by Special Program for Food Security and by the Emergency Unit.

As per further information requested by our colleague Variava, I may inform that a brochure has been produced and that when FNPP was closed when a student was doing a thesis addressing

various issues related to the vegetable production in sacks. I don´t know where it stands right now. As per the rate of adoption, FAO Mozambique can pursue with investigation on that to find out how many NGOs and communities are using the techniques, particularly in Northern districts in Gaza Province as a result of FNPP program.

Contribution by Raul Varela, from Mozambique

As per your request please find attached some brochures produced under FNPP:
- Panfleto Hortas in Sacos (gardens in sacks) at
http://km.fao.org/fsn/resources/fsn_viewresdet.html?r=480
<http://km.fao.org/fsn/resources/fsn_viewresdet.html?r=480>
- Importancia da moringa na nutricao (Importance of the moringa plant for nutrition) at
http://km.fao.org/fsn/resources/fsn_viewresdet.html?r=481
<http://km.fao.org/fsn/resources/fsn_viewresdet.html?r=481>
- Panfleto cultura de moringa (how to cultivate the moringa plant) at
http://km.fao.org/fsn/resources/fsn_viewresdet.html?r=482
<http://km.fao.org/fsn/resources/fsn_viewresdet.html?r=482>
- Purificacao de agua (Purification of water) at
http://km.fao.org/fsn/resources/fsn_viewresdet.html?r=483
<http://km.fao.org/fsn/resources/fsn_viewresdet.html?r=483>
- Testemunhos no uso da moringa na Africa (examples of the use of the moringa plant in Africa) at http://km.fao.org/fsn/resources/fsn_viewresdet.html?r=484
<http://km.fao.org/fsn/resources/fsn_viewresdet.html?r=484>

There are many more brochures produced under FNPP. Please contact Frank Mischler (frank.mischler@fao.org <mailto:frank.mischler@fao.org>) if you have further interest on them. Variava, please contact Alejandro Acosta. He is an APO at FAO Mozambique:Acosta@fao.org

Take care,

Regards
RV

Contribution by Imelda Angeles-Agdeppa, from the Food and Nutrition Research Institute, Philippines

Dear Collegues,

This initiative is similar with the Philippine initiative on food production wherein used cans or any trash plastic containers are utilized to grow plants/vegetables to supplement households' food intake. Until today this is being practiced especially in urban areas where lot is a problem. What we really need to do is to strengthen advocacy for its implementation.

IMELDA ANGELES-AGDEPPA, Ph.D
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