

Annual Research Report

EFFECTIVENESS OF HORTICULTURE THERAPY IN INTEGRATING PEOPLE WITH MENTAL ILLNESS INTO THE SOCIETY



Annual Research Report BasicNeeds Sri Lanka (January– December 2008)

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SRI LANKA

**EFFECTIVENESS OF HORTICULTURE THERAPY
IN INTEGRATING PEOPLE WITH MENTAL ILLNESS INTO THE SOCIETY**

A RESEARCH STUDY

2008

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**Research & Policy
BasicNeeds Sri Lanka**

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List of Acronyms

BNSL	BasicNeeds Sri Lanka
DALYs	Disability Adjusted Life Years
GBD	The Global Burden of Disease
NCD	Non-Communicable Diseases
QoL	Quality of Life
SLT	Sri Lankan Time (GMT + 0530 Hours)
WHO	World Health Organization
YLD	Years of Life lived with Disability
YLL	Years of Life Lost

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1. Executive Summary

Horticulture therapy is designed as a rehabilitation intervention to assist individuals to recover from mental illness and return to community life. This project was established in a 1.5 acre separate land belonging to the Institute of Psychiatry in June 2003. There were 17 destitute mentally ill people from ward 22 as participants of the project and 4 Hospital staff. With the gradual expansion of the project, the possibility of using Horticulture as a tool to rehabilitate and build self-esteem was tested with the participation of 342 mentally ill people. During the past 4 years of this project, 131 participants have been able to get reintegrated into the society, some of them working as employees (accommodated within the hospital and) of other working places located out of hospital premises. Some participants commenced living with their family members.

Likewise the project has its achievements recorded. However there was no systematic research study conducted in the past, on effectiveness of horticulture therapy as an intervention that supports people with mental illness to get reintegrated in to the society.

Therefore this study was planned to investigate following research questions to study effectiveness of this project.

1. How do horticulture activities impact on in the recovery process: impact on symptoms, functional life skills and social re-integration?
2. How do the skills and the knowledge gained through horticulture activities support people with mental illnesses to get integrated in to the family and the community?
3. What impact does the horticulture therapy has in the process of social integration in terms of changing the attitudes of careers, family and the community?

The research revealed the following findings in relation to above questions:

- Horticulture activities are able to improve mental well being of people with mental illnesses as therapeutic interventions as revealed through improvements of their involvement in daily activities, self-esteem, personal hygiene and through reduction of symptoms.
- Horticulture therapy is also more successful in motivating people for livelihoods when it is integrated with programs in livelihood skill development.
- In addition to therapeutic activities, opportunities for different social relationships in the project have contributed to improve social interactive skills of people with mental illnesses.
- Horticulture project has also contributed to change attitudes of community towards people with mental illnesses through entrepreneurial relationships developed between them through sales outlet at the project and managing savings accounts.

2. Literature Review

Burden of Diseases and mental disorders; global, regional and national and the role of Horticulture as a therapy in mental disorders

2.1 Burden of diseases and mental disorders: global and regional

As evidence suggests all over the world the burden of non-communicable diseases (NCDs) seem to be growing rapidly across all ages. This is more or less same in the high income countries as well as low and middle income countries like Sri Lanka. According to the World Health Organization's 'The Global Burden of Disease (GBD) - 2004 update' (World Health Organization (WHO), 2004) almost half of the disease burden even in low and middle income countries is now due to non-communicable diseases.

Even among the NCDs, mental health disorders seem to be taking a quite an important place as evident by the GBD 2004 update according to which Uni-polar depressive disorder alone ranks third when considering the overall causes of the disease burden both communicable and non-communicable thus first in non communicable diseases. To further exemplify the high contribution of the mental health disorders to the burden of diseases and it's relation to the Sri Lankan context it would be worthwhile to note that in middle income countries Unipolar depressive disorder ranks right at the first place among the causes of disease burden (WHO, 2004).

In the context of South-East Asia, Unipolar depressive disorder seem to take the fourth leading cause of the overall disease burden ranking second out of the NCDs with its Disability Adjusted Life Years (DALYs) just below Ischaemic Heart Disease (WHO, 2004). Unipolar depressive disorder with a disease burden of 21.1 million DALYs as opposed to 21.6 million DALYs of Ischaemic Heart Disease which accounts for 4.8% and 4.9% of overall disease burden of the region, making the burden of mental health disorders a substantial component of the overall burden of diseases in Sri Lanka both as a South Asian and middle income country in the world (WHO, 2004).

The burden of diseases is measured by Disability Adjusted Life Years or DALYs. DALYs is a combination of years of life lost (YLL) and years of life lived with disability (YLD) which takes into account the years of healthy future life lost due to premature mortality and disability or injury respectively, and is a measure of overall healthy future life lost due to death, disease, disability and injury (Lopez, n.d.).

2.2 The Sri Lankan Context: Clinical, Socio- economic, environmental and political dimensions

This burden of mental health disorders in the region is further worsened and complicated in Sri Lanka by the ongoing conflict and terrorist activities that has been present for the past three decades mainly in the Northern and Eastern provinces of the country and also by the recent Tsunami disaster that struck the island on 26th of December 2004, among many other adverse socio-economic and political conditions prevalent. According to the WHO Country Office for Sri

Lanka's June 2008 Mental Health Update an estimated 3% of the Sri Lankan population suffer from some kind of mental disorder (WHO, 2008).

Lack of proper health care facilities to engage and identify this burden at a community level and limitations in accessibility along with the scarcity of adequately qualified human resources and adequate and appropriate drugs for treatment is highlighted in many academic, professional and non academic forums and research work (BasicNeeds Sri Lanka, 2007). The prevailing social context, which act both as a coping mechanism and as well as a hindrance to effective treatment, rehabilitation and subsequent social integration too is another important factor. The lack of awareness in the society with regards identifying a mental disorder thus not resulting in a subsequent treatment seeking behavior while impeding the process but the belief of god and deities and karma as the ultimate cause of such disorders seem to serve as a coping mechanism according to some scholars (D'souza & Singh, 2005). The issue of social stigma prevalent is another major social factor contributing to the burden of mental disorders by obstructing the process of treatment and rehabilitation which BasicNeeds Sri Lanka program has repeatedly encountered in their activities in the community.

2.3 Horticulture as a therapeutic measure:

When the burden of the mental health disorders is such in the global, regional and local contexts the challenges in integrating people with mental disorders back into the society once stabilized by appropriate treatment and care is an aspect which requires much exploration in reducing this disease burden to the overall health system and to the society to a greater extent. There are various occupational therapeutic modalities that are being administered to those consumers who have been stabilized currently with varying degrees of effectiveness and success. To this extent the role of horticulture as a therapeutic measure has been in use in many conditions where the consumers experience some form of disability or the other including physical and mental disabilities with the aim of improving both physical and psycho-social well being and overall quality of life of the recipients' regardless of the cause of their respective disabilities. In more specific terms there's evidence to show that horticulture related activities improve the time duration of engagement and mood of the participants more in comparison to other traditional activities in Dementia patients (Gigliotti, et al., 2004). There is further research carried out on people diagnosed with chronic mental disorders that states "horticulture, when used in a group-based setting, has an immediate and positive effect on life satisfaction, well being, and self-concept, which are all components of quality of life (QoL)" (Perrins-Margalis, et al., 2000, pp. 15-32).

While horticulture is being used in various contexts in various targeted special groups to a varying extent and degree scientifically and methodologically collected well documented data and literature on research carried out in Sri Lanka regarding the effectiveness of Horticulture as a therapeutic mode in people with mental disorders seem to be sparse. In this backdrop the following research on effectiveness of horticulture therapy in integrating people with mental illnesses into the society was carried out by BasicNeeds Sri Lanka country programme in the year 2008.

3. Methodology

This research followed a qualitative approach which is more suited to study the relationships between horticulture therapy activities and social integration of people with mental illnesses. This relationship is not a correlation one and it is a relationship which requires more descriptive explanations. Therefore the data collection was primarily qualitative which included following methods to obtain user and stakeholder perspectives.

1. Focus group discussions
2. Key informant interviews

3.1 Sample / Scope of study

Presently there are 45 mentally ill people involved in horticulture project attending therapeutic activities on a regular basis. However during the 3 days that the focus group discussions were conducted, there were only 27 people attending. Twenty three out of these 27 that were attending the project activities during the days in which the study was conducted were again selected for the study, based on the duration they were involved in the horticulture project activities and their functional ability in communicating with the researcher.

Thus the three main criteria for selecting the sample involved in the study were as follows (Note that all 23 respondents fulfilled all three criteria) :

- People with mental illness who have been in horticulture project activities for at least over a year.
- Those that were present at the horticulture project during the three days the Focus Group Discussions were conducted
- People with mental illness who are in a status to communicate ideas clearly.

3.2 Data collection

3.2.1 Focus group discussions

Three (3) focus group discussions were conducted separately with people with mental illness and one discussion was conducted with the volunteers. These discussions were conducted to get their perspectives in relation to research questions. Annex 1 and 2 gives the guideline used in these discussions

Research and policy officer conducted 3 focus group discussions with people with mental illnesses, with the support of two volunteers in the Horticulture project. There were 9 participants for one group and 7 and 5 for the other two groups. One focus group discussion took 2 to 3 hours at maximum. The information generated through discussions was recorded in a flip chart as bullet points while details were recorded by a volunteer in a note book.

The other focus group meeting conducted was with a team of 12 volunteers of the Horticulture project.

3.2.2 Key informant interviews

Research and policy officer conducted key informant interviews with following professionals and persons who have direct relationships with the Horticulture project. Annex 3 gives the interview schedule used.

- Psychiatrist nurses attached to Horticulture project.
- Field staff in the project (BasicNeeds and government).

However, due to time constraints, Research and policy officer was unable to interview a psychiatrist and the Director of National Institute of Mental Health, Angoda.

3.3 Data analysis

The steps mentioned below were followed in analyzing the reports of 4 focus group discussions and 2 key informant interviews.

1. Research and policy officer read two reports of two focus group discussions in whole while categorizing information to get a general idea relating to research questions. (Categories of analysis were developed within readings in the documents, but with focus of main research questions).
2. Here major opinions and perceptions were coded (through categories) in relation to impacts of the Horticulture project
3. A summary was produced by using so categorized information.

3.4 Limitations and challenges

One main challenge faced by the Research and policy officer was that he couldn't organize participatory data analysis sessions. This was because he had conducted focus group discussions during the very last two weeks of December. (It took a long time to have permission, from the National Institute of Mental Health, to start the research). Therefore the analysis of information did not include the participation of people with mental illnesses although the research design stated otherwise.

However in the analysis in this report, it was tried to highlight the points which people in focus groups mostly and interestingly presented.

There were no focus group discussions with family members as they had not been planned due to practical reasons.

Another limitation of the study is the *research biases* that may have been in operation. In this particular study *sampling bias* and *researcher bias* may have played a significant role. Since the sample is very small and even that sample is chosen out of the consumers who are already taking part in the Horticulture Project and attending the activities on the days the research was conducted which in total 23 out of 45 a mere 50% makes the process more vulnerable to bias. Since the researcher is already part of the program that initiated the therapeutic project and the very fact that the used methodology was a qualitative one increases the researcher bias to a significant level as well.

4. Analysis

4.1 Daily horticulture therapy activities

In the Horticulture project, people with mental illnesses start the day by religious activities and other recreational activities such as exercises which continued for a short time. As revealed by the volunteers there, these activities support the people with mental illnesses to relieve their minds from any confused thoughts and make their minds fresh for the day.

Subsequently, volunteers in the project conduct a short consultation with them to know their present status, problems and interests. Objective of this is to motivate people to express their feelings openly and make them feel they are connected to each other and daily activities. Here the volunteers consult each person with mental illnesses about the horticulture activities as well as their interest to get involved in them. Therefore activities are started as small group activities as follows, with the support of volunteers.

- Plant cultivation.
- Fruits and vegetable cultivation.
- Landscaping

- Mushroom cultivation,
- Compost making and
- Making cement pots.

Although the people are involved in activities as groups, they have the freedom to join another activity as per their interest. The instructions provided by volunteers are also flexible and helpful for the people with mental illnesses in carrying out activities flexibly according to their personalities and choices.

4.2 Impact of activities on mental illness and behavior

It is believed that horticulture therapy is one of the rehabilitation tools to help people with mental illnesses to overcome their disabilities caused as a result of mental illness. Focus group discussions conducted with people with mental illnesses revealed that the project supported them

to control their illnesses and to improve behavior in a very pleasant and interesting environment when compared to a hospital.

They mentioned that they follow a very routine and boring life inside the mental health hospital. Therefore this is the main reason to attract them in to Horticulture project which supports them to get released from a tedious environment of hospital and routine life. (This point was highlighted several times at 3 focus group discussions).

“Ward is like a prison for us. Only enjoyment we have there is: watching the television. However at here (Horticulture project) we are really happy when we can make jokes with each other and can do several work with the support of others’ - Janaka, 35 years person suffered from Schizophrenia.

It is also clear that the activities contributed to improve concentration of people and reduce excessive feelings those linked to mental illnesses.

“There are numbers of thoughts coming to my mind when I am sitting on a bed in a hospital. But when we came here and doing work with others, we must think only about that. So we don’t have to think about unnecessary things” - Perera, 67 old person with psychosis

Status of mental health of people in the Horticulture project was also observed through improvements of their personal hygiene. Volunteers mentioned that activities of daily living attached to the project resulted in building attitudes and habits in people with mental illnesses to maintain their personal hygiene properly. They also pointed out that at the start of activities in the Horticulture project, most people complained that they are sick and they can not work. However gradually they learn that they can work and take responsibilities.

In the hospital, people with mental illnesses do not have enough opportunities to get recognition and appreciation for their work. However, when they attend Horticulture therapy activities they feel happy and confident about themselves through seeing results of their activities such as harvest of different cultivations. Acceptance and appreciation of volunteers and staff of these results also improved their self-esteem.

4.3 Life skills and knowledge

The project also contributed to develop different life skills such as working in a group, thinking about different solutions, cooking, money management, and sharing skills with others, in people with mental illnesses.

Working in a group contributed to decrease fear about society and to improve interactive social skills. As pointed out by both volunteers and people with mental illnesses, there are significant improvements in communication and relationships of people after they joined the HT project.

“Other people (mentally ill) in the hospital are not like us, they fear to come forward and work like us. We are happy to talk to other people and to know them’ Neil Chaminda, 28 years old person

There are also other activities such as ‘Shakthi’ sales outlet where people with mental illnesses can make relationships with outside community. ‘Shakthi’ is the sales outlet at the gate of the Horticulture project to sell mushrooms and other horticulture products to neighbor community. Some people with mental illnesses and volunteers are jointly working in here to sell, keep accounting and to organize products. This contributed to improve their social interactive skills as well as marketing skills.

The other significant impact of the Horticulture project is the development of income management skills in the people with mental illnesses. According to the volunteers there are 26 people with mental illnesses who have opened savings accounts as a result of horticulture project activities. Usually volunteers support people to go and open savings accounts at the post office near the hospital. Savings accounts are opened after three months of people joining the project. People are paid Rs 20/- weekly payments and also sometimes they receive special payments through selling of products. Volunteers guide them to save a bigger percentage from these incomes while letting them to use rest for their daily expenses. As a result of these, most of them now use to independently save income and use those money to buy their daily need, which is other way improving their social interactions. According to volunteers there are savings accounts ranging from Rs 400/ to Rs 50,000/-. However accounts with more savings are not solely dependent on income through Horticulture activities, but also from earned money through other income generation activities carried out by some people.

There are some instances people involved in Horticulture used their savings accounts to save more money which they earned through newly started income generation activities. This also contributed to reintegrate them in to families with essential economic skills.

Selvaraj was neglected fully by his family after admission to the Mental Hospital. No one ever came to see how he was faring. He was stabilized through the Horticulture project and was able to save nearly Rs.55,000 working for the company ‘UltraKleen’ doing janitorial services within the hospital. The family expressed their willingness to take him home. Selvaraj decided to return home and start weaving tea leaf baskets which he could sell to the tea estates.

4.4 Social integration and changing attitudes

One significant change mentioned by both volunteers and people with mental illnesses is the difference in social reactions between people attending the Horticulture project and the people (mentally ill) in the hospital. They showed that compared to people in the hospital, people involved in horticulture activities are coming forward to share their ideas and keep relationships with others without fear.

There are several ingredients in the project, those contributed to improve social integration skills of these people. Volunteers often address all people with mental illness as their relatives and friends using pronouns such as ‘Uncle’, ‘Brother’, ‘Sister’ and ‘Grandpa’. They very rarely address by

their names. This makes people with mental illness to feel that volunteers are very close to them. This resulted in building their self confidence for social relationships.

'Unlike the officials in hospitals, these sisters (volunteers) treat us like friends and support us to do works together' Neil Chaminda, 28 years old person

People with mental illnesses also get opportunity to integrate with community through other outside activities which include entrainment visits, watching movies at cities, and participating in national exhibitions. As a result of these, people who were limited to certain geographical area of hospital received opportunity to have a variety of social interactions. Compared with their improvements in social integration with neighbor community (around hospital), these outside visits contributed to improve their confidence to make relationships with unknown communities as well.

The Horticulture project has also contributed to change the attitudes of the community towards people with mental illnesses through entrepreneurial relationships developed between them through sales outlet at the project and managing savings accounts. These positive relationships are limited to neighbor community to the hospital, who can easily see and understand progress of people with mental illnesses. However this proved a strong strategy to change attitudes towards destitute people with mental illnesses through exhibiting and communicating the capabilities of people with mental illnesses to other communities.

5. Findings

- Evidence shows that horticulture activities are able to improve mental well being of people with mental illnesses as a therapeutic interventions, when they are involved in those activities for a sufficient period, depending on the status of their illnesses. The impacts are visible in the improvements of their involvement in daily activities and personal hygiene, and in reduction of symptoms.
- Horticulture therapy proves to be an encouraging approach to motivate people to start income generation activities and win back self respect and acceptance of their families and was more successful when the Horticulture activities are integrated with other livelihood skills development such as training on managing income through opening and operating savings accounts.
- Evidence moreover reveals that creating opportunities for people with mental illnesses to interact with diverse communities are also very important in developing social interactions skills of people who have been living in a mental health hospital for a long time. Therefore other social interactive activities attached with Horticulture project have contributed to improve social integration of the people involved.
- The project also reveals that communicating the talents of people with mental illnesses is a strong approach to change the attitudes of community towards mentally ill people.

6. Discussion

As discussed above in the literature survey there seem to be a strong relationship between the income of a country and the burden of mental disorders thus reducing some of the positive impact of economic development achieved of the same by having to invest in management of the affected and also in terms of the productive years lost due to illness. Thus in the context of Mental Health and Development, reducing this disease burden seems like a strategy to adapt that benefit both the affected individuals as well as the general population at large as the burden seems to be a significant portion of the overall disease burden. This holds true especially for a country with an emerging market like Sri Lanka.

In this light as this study reveals, Horticulture as a form of standard therapy in rehabilitating and integrating the people with mental disorders seem to take an important role. Horticulture Therapy could work as an adjunct to the pharmacological management and would be a much more economic alternative when compared to the cost involved in developing a new mode of medication and has the added benefit of being eco friendly solution thus supporting sustainable development on the other hand.

Therefore it perhaps would be appropriate to consider horticulture therapy as a standard form of therapy to be strategically introduced in the plan of care and management of individuals affected with mental disorders, so that their recovery process and subsequent social integration process become effective. This also calls for giving due recognition to this form of therapy in professional and academic and other related ancillary training schemes and recognizing by the administrators and policy makers of the importance of these activities and taking appropriate administrative and policy measures to include horticulture therapy in their planning and management including allocation of budgets and resources for the same. Which could result in using the Horticulture Project at National Institute of Mental Health, Angoda as a prototype in replicating similar projects and service elsewhere in the island where facilities to manage people with mental disorders seem to be limited.

Furthermore this also serves an economic activity itself both to the affected individual and to the community at large. If further developed it could even be a long term forum/platform that cultivates the self confidence, self respect and acceptance by their careers, families and the community at large including prospective employers. Thus addressing the issue of social stigma through a direct and in a practical way as opposed to abstract anti-stigma campaigns.

Thus as laid down in the literature survey, horticulture therapy could be considered as a viable option in increasing the effectiveness of integrating people with mental disorders back into the society and this research findings could serve as a foundation and supportive evidence to other such future studies on the same topic which seem to be sparse. However one limitation of the study is the lack of a control or a comparison between horticulture activities and other routine day to day activities of people with mental disorders in their ward setting in comparing the effectiveness of these activities which if included may have further strengthened the findings of the study.

Another such differentiation that could be used in a future study or even could be conscious about and be aware of by the service providers of the horticulture project is the variety of activities in the

horticulture project and whether there's any difference in effectiveness of such activities in terms of preference by the consumers as well as in terms of effectiveness in social integrating.

All in all these findings are important to consumers and carers and their immediate family in planning the care of the affected individuals, as well as mental health and development practitioners at different levels. That is from volunteers working in the ground to consultant psychiatrists and other related professionals and community workers. Both government and non-government institutions that deals with health care and development too could draw lot of insight into their work through these findings in planning and carrying out their work including private health care facilities in Sri Lanka which mostly seem to focus mainly on the immediate pharmacological management of illnesses. Finally employers who are willing to provide employment opportunities for individuals affected with mental disorders and policy makers in drawing policy recommendations and decisions too could be beneficiaries of these findings to deliver better care for people with mental disorders in a manner that their basic needs and rights are ensured.

7. Recommendations

Based on the study findings following recommendations could be made for adoption in caring people with mental disorders;

- Inclusion and offer Horticulture Therapy and activity as a part of the standard care received by people with mental disorders
- To take measures to replicate the Horticulture therapy activities in other parts of the country in association with mental health facilities
- Use the project and the research findings to educate, train and create awareness of the consumers, care givers and clinicians and other professionals involved in caring people with mental illnesses in the effectiveness of the same in integrating people with mental illnesses into the society
- Taking appropriate measures to create awareness and reduce stigma by giving maximum possible exposure of the project and research findings and the marketable products that may come out of the project among the general public, policy makers alike and potential employers for the consumers in the project and consumers at large.
- Initiate evidence based advocacy measures to include and provide horticulture as an option of occupational therapy in the health care system of the country.

8. Conclusion

Although this is a qualitative study, it is able to reach the following conclusion in a very limited context.

“Horticulture therapy is an effective approach to integrate mentally ill people when it is integrated with other community interactions and economic enhancements for them”.

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Annex 1

Discussion Guide for the Focus Group Discussions with Volunteers in the Horticulture Project

1. First facilitator/research assistant should introduce himself/herself and explain the objectives of the research and the discussion. He/she should also get the consent of the participants for their involvement in study.
2. First facilitator/research assistant should familiarize with the participants by inviting them to introduce themselves. People with mental disorders should be encouraged to give self introduction with;
 - Brief details of the past of their life, including family life and starting of the illness, duration of the illness.
 - How they attended mental hospital
 - How they joined horticulture project and duration of being involved with the project

However facilitator should give opportunity to the participants to do self-introductions as convenient to each of them. Therefore he has to motivate them by actively listening and giving moderate responses.

3. Next facilitator can start the discussion on horticulture activities which participants daily get involved in. Model questions / prompts are as follows
 - How do you start a day in the horticulture programme?
 - What are the activities you do daily in here? Are there different activities or single activity for the whole day?
4. Facilitator should consult how these activities support them to improve their mental health or control mental disorder. He can use following questions as suitable with each participants.
 - How do you feel after getting involved in these activities?
 - Do those activities support you to control illness than before?
 - Are there any changes or improvements in your behaviour after horticulture activities? If yes. What are those changes?
 - Do you see any difference in your changes in hospital and horticulture programme? Then how is it and what are they?

Here facilitator should direct these questions according to the status of each participant. This is to ensure that ideas of all participants have been heard in the discussion.

5. Next facilitator can direct same discussion on life skills require for livelihood, by using following questions?
 - Do you see changes in your skills after horticulture activities?
 - What are those changes and improvements in skills? Are there new skills improved as result of horticulture activities?
 - How do these skills support you to do livelihood activities you did before or to start new activities?

6. Facilitator should continue discussion by directing that to how horticulture activities support to change and improve relationships and community attitudes towards people with mental illnesses?
 - Do you see any changes of your relationships with community after you got involved in this programme?
 - What are those changes and improvements?
 - How did horticulture programme support to these improvements?

Annex 2

Discussion Guide for the Focus Group Discussions with Volunteers in the Horticulture Project

1. Objectives of the research and discussions should be explained first and volunteers should be given the opportunity to introduce themselves.
2. Next facilitator can use following questions with an informal discussion on impacts of horticulture project on lives of people with mental disorders?
 - What are the daily horticulture activities which people with mental illnesses get involved in?
 - How do you get involved in those activities to support them?
 - Do you see any changes and improvements of mental health of people after these activities?
 - What are those changes? Could you please explain those changes in relation to;
 - Behaviour
 - Eye contacts
 - Symptoms
 - Do you see differences in these improvements in relation to people with common mental disorders and people with severe mental disorders? If there are such differences what are those?
 - If there are no such improvements how do you see the impact of horticulture project?
 - How do the activities support to improve life skills of people?
 - How do horticulture project contribute to improve relationships of people with mental disorders and to change community' attitudes towards them?
 - What are your suggestions to improve impact of the project?

Annex 3

Interview Schedule for Key Informant Interviews

1. What are routine horticulture activities people with mental illnesses are involved in?
2. How many people are there in the project? How many people get involved weekly and monthly in the project?
3. How do you see the impact of activities on mental health of people? Could you please explain those changes (negative and positive) in relation to;
 - i. Behaviour
 - ii. Eye contacts
 - iii. Symptoms
4. Do you see differences in these improvements in relation to people with common mental disorders and people with severe mental disorders? If there are such differences what are those?
5. If there are no such improvements how do you see the impact of the horticulture project?
6. How do activities support to improve life skills of people?
7. How does the horticulture project contribute to improve relationships of people with mental disorders and to change community' attitudes towards them?
8. How do you see all these changes in relation to broad social integration of people involved in this project so far? What are the main strengths and weaknesses of the project in social integration?
9. Therefore what are your recommendations to improve the impact of the project?

~ Thank you ~