

# FAO's Fruit Nurseries in Amhara and Tigray Regions: Vibrant Projects Full of Promise

A team of journalists from Focus magazine recently travelled to Amhara and Tigray regions to visit the various projects run by local administrations and the regional agriculture and rural development bureaus with the assistance of the UN Food and Agriculture Organization (FAO). The journalists visited various fruit and vegetable nurseries and other related sites. They chatted with farmers, extension workers, fruit and vegetable experts, representative of bureaus of agriculture and local administrators as well as FAO experts in the region. They also conducted interviews with many stakeholders. Following are the impressions and opinions gathered in the course of the journalists' visits to those places.

FAO is currently helping 32 different farmers' associations in Amhara and Tigray regions of North Ethiopia to implement a wide range of fruit nurseries. The plants distributed to the various farmers' associations are from different fruit species that came from various countries. Seedlings have been imported from Italy, Cuba and Kenya, all known to be of high quality both qualitatively and quantitatively in terms of their outputs an example is the introduction of a variety of papaya from Cuba called maradol. Grafted plants of oranges, mangoes and seedlings of papaya as well as apple, apricots and plums grow in the fruit nurseries.

Selected temperate and tropical fruits: The projects on fruit growing supports nurseries multiplication activities and advisory services to farmers. It is a partnership under which FAO offers technical assistance and materials supplies while the regional agriculture bureau provides land and manpower. The technical capacities of government staff is being enhanced through practical exposure. FAO initially attempted to

supply farmers with the fruit trees from the Upper Awash but the attempt proved very expensive; plants produced in Amhara and Tigray directly help to cut costs twofold.

Generally speaking, the fruit nursery stations use for irrigation water from nearby rivers in the area based-relaying on irrigation works or water harvesting stations. Sometimes, water "tanks"/ponds are used to preserve the water for irrigation purposes.

The method used to produce better quality fruits trees is by combining the root stock and scions and this has proved effective in producing better quality plants

been made to domesticate it. But now, thanks to FAO's assistance, a great effort is being made to widely popularize the cultivation of this particular multipurpose species. Cactus can be used as food, in the production of medicines, as fodder for animals and for the prevention of soil erosion. Cochinea, an insect that feeds on cactus, produces a high-value red dye that is widely used in the food and drinks industry. FAO has conducted a study to explore the potentials of the plant for local use as well as for export and vigorous activities are being undertaken in this direction in collaboration with the regional agriculture bureau (and with group of Peruvian and Mexican investors in the case of Coccinea).



Farmer in Wukro

that give quantitatively higher yields in a relatively short period.

Cactus: cactus, a widespread drought-resistant plant, grown wild in Tigray. Although cactus is widely known in our country no serious attempt had so far

Transferring knowledge: Among the projects, the nurseries of fruits and vegetables in some woredas of the two regions have overwhelmingly attracted the attention of Focus journalists. The journalists seized the opportunity to talk to farmers, extension workers, agricultural

experts and local administrations in the region.

The visit gave the reporters the opportunity to witness some of the ongoing progress in rural Ethiopia. The farmers are now developing a different mindset than we usually perceive from a far. They are becoming development oriented and business minded. That is what Focus reporters learned in some Amhara and Tigray areas. They learned that the farmers need just simple awareness and guidance to adopt affordable modern technologies.

The Ethiopian Rural Development Policy and Strategy document emphasizes the needs for technology supply and distribution in a bid to transform the lives of the rural communities. (Amharic version, pp. 55-66, 2002). In the policy document it is clearly indicated (page 61) that new farming methods and technologies should be transferred to the farmers through short-term training, consultations and extension programs. The document also stresses that improved seeds and agricultural tools must be provided to producers

process of technology transfer. It also gives due consideration to the time span the technology transfer demands. According to the policy, if introducing the technology is to take fairly long time the expected output is not as satisfactory; that means efficiency, time and productivity are important elements of the sought technology. This principle is exactly being translated into practical actions in Amhara and Tigray Regions where Focus reporters got the opportunity to visit FAO's local agriculture and rural projects.

**Exciting opportunities:** These bodies are endeavoring to develop horticulture schemes. The journalists observed enthusiastic farmers, extension workers and experts from FAO and agriculture and rural development offices working closely together. They seem determined to change their "world" for the better. The farmers are so cheerful to be introduced to a new kind of farming method and to see fast growing plants in their gardens as opposed to their prior experiences. Extension workers are delighted to see "clever students"-model farmers who immediately take

In the same manner, the experts are also delighted because their lab experiments are perfectly working in the fields. That is how Focus reporters evaluate their field visit to some sites in Tigray and Amhara regions where FAO is operating with local administrations and agricultural and rural development departments.

In the past, fruits and vegetables were produced in most cases by individual farmers for household consumption. They have not been mainstream crops in many areas in the country even though most areas of the country are suitable for various types of fruits and vegetables. Virtually any kind of fruits and vegetables can grow in Ethiopia from tropical to temperate. Common fruit types include papaya, citrus, banana, mango, avocado, guava, grapes, pineapples, apple, passion fruit, and lemon. These fruits are now becoming a focus of attention among farmers. They are not only growing the fruits and other vegetable varieties for household consumption alone. They are becoming significant income generating sources.

A number of agricultural research centers and nursery stations in different parts of the country are distributing plants of highly marketable fruit species and varieties like apple. With the speedy transformation in the agriculture sector and the efforts being made to implement the policy set by the government, one can reasonably argue drastic change is not too far to come. In fact, one can't lose insight of fact that the changes under way are of incremental kind. Be that as it may, every one can logically feel the pulse of change in the farming sector.

**Welcoming change:** Another issue to note is that areas that have previously known for certain types of crops are gradually being introduced to diversification approach in their production. Food types that are common in certain parts of the country are also gaining recognition in other areas today. The case in point is inset (a plant some call false banana). Previously it was regular food only in the southern part of Ethiopia. It has now become one of the national foods attracting both researchers and consumers.

And yet one point stirs one to raise a question regarding our food habits: even



Fruit Market in Alamata

through similar mechanisms. The policy is clear enough about improved seeds and agricultural tools. It acknowledges that this stuff must be widely replicated to reach many farmers because quantity is also as important as quality in the

up "lectures" to put them into practical actions. There is no better reward for a teacher than to have clever students who do homework correctly and answer exam questions satisfactory—the answer in this case being actual yields in the field.

though there are plenty of edible varieties of animal and plant products, for long habits remained almost constant which led to dependence on the consumption of age-old foods. No doubt, to abandon one's personal habit takes price let alone broader societal culture. The introduction of fruit shows our significant adoptability— it is often not a question of what we should give up but of what else can we eat? The evidence so far is encouraging and shows that habits can be protected while also allowing change for the better. Sustaining this needs coordinated attention like other aspects of the transformational efforts.

One can rationally take for granted that we can see a better Ethiopia in the near future. Given the government is persistent with its endeavors, given that the peace and security of the country is intact, given the pace of development continues on the same wheel, it can be certainly asserted that Ethiopia will sooner rather than later be able to erase its name from the black book of famine and hunger. The thing is, in fact, whether it can maintain the momentum or not: The momentum is likely to be kept. It would be kept if the real producers are able to reap the fruits of their produces. If they are able to see any reward for what they are doing, that is a motivation and the driving force to continue working and to aspire for change. That is how Focus magazine witnessed the farmers engaged in horticulture development in some parts of Amhara and Tigray regions.

From the horse's mouth: To substantiate the facts we have discussed so far, we present our readers excerpts from the horse's mouth - those people who are involved in the horticulture development in the mentioned areas.

As mentioned earlier, Focus also approached beneficiaries of FAO assisted projects in both regions: Amhara and Tigray. It was apparent that the beneficiaries are so glad to be introduced to a new production technique and yield type through the help of experts and a generous organization. Let's hear their impressions from them.

"My name is Ayalew Yayu. I am a farmer in Aradoma Kebele 08 area. I am able to develop my orchard by using grafted fruit

plants received from FAO supported nursery. I have become self-reliant.

"My name is Solomon Ayalew. I belong to the Garjale station at Adi Shashimi. More than 900 people have been engaged in the construction of water harvesting points. At the beginning we planted a variety of papaya fruit and 250 mango trees and a lot of coffee trees on that site. Coffee experts told us the coffee we have planted is an excellent type. I have privately planted 1200 coffee trees and four types of avocado trees. "Another seedling provider for us is the agriculture office. FAO is providing us with a species of fruits and gives us technical support. When I started developing horticulture, my folk said that I would sooner than later abandon the business because they thought it was unrewarding. But IPMS and the Alamata wereda administration have helped me get technical and professional support to sustain my horticulture. Growing avocado and other fruits soon proved to be benefiting. It is only about two years that we started growing these plants. Farmers in this area have planted 120 avocado trees. I hope we will see the result in less than 5 years time. Our initiative has inspired other farmers. They are following our footsteps. We expect change for the better. We also hope FAO will keep on providing us support until we could stand on our own two feet."

"My name is Abera Tareke. This area was barren until recently. Now it is changing over the last two or three years. We used to travel more than two hours to find water for our cattle. But agriculture experts came to us and advised us to dig wells to find water in our garden. We did that and got water. We use the water both for drinking and watering vegetables in our gardens. There is improvement in life."

Berhe Teka is a farmer, a resident in Alamata wereda of Southern Tigray. He is one of the model farmers in growing fruits. He has spoken to Focus journalists.

"We are many in number. There are many farmers in this area. Some of them are working with me. I have attended a training given to model farmers by agriculture bureau at a place named Adish. We have been given two seedlings each from every seven temperate zone fruit varieties brought from Italy. We have planted them

in our plots. I have now papaya, mango and avocado. Previously I was alone when I started the venture. Now there are 12 farmers who followed suit. Farmers like grafted plants of improved varieties. But the nursery is young; it can't satisfy the growing demand of farmers. Previously there were attempts to grow normal fruits. The return was unsatisfactory. Now we are hopeful we will get good results"

Experts have also similar impressions to share with Focus magazine. Lakew Gebre is a horticulture expert with the agriculture and rural development bureau of agriculture in Kobo, North Wollo zone.

Next is his testimony about the project under discussion.

"FAO is providing us with necessary materials like fruit trees and equipment. The support helped us run our activities effectively. Previously we could take care of 5 to 6 farmers due to resource limitation. Now we are able to improve our services both in quality and quantity since we have started working closely with FAO. We hope we will achieve better results.

"The project is expected to phase out in June, 2009. What worries us a bit in the level of capacity at our disposal. Our nursery is serving ten kebele administrative areas. Six of the kebeles are rural and four are urban. Household beneficiaries are estimated at 23,000. The urban administration alone is responsible to manage 1,139 hectares of irrigable land where fruits are extensively developed. We are engaging farmers in fruit development on a permanent basis. There is huge demand for fruit plants. Everybody has become a fruit grower. Everyone is now aware of the benefits obtained from fruits. With the tremendous demand for the trade and the capacity limit we have, we will be pleased if FAO continues to capacitate us. The rest is fine."

Getachew Arage is in charge of coordinating agriculture extension activities under the agriculture and rural development department of North wello Zone of Amhara Region. He is also coordinating FAO project in the zone. He told Focus reporters that Mersa area is

suitable for fruit production. He said they collect fruit seeds from local juice houses since there are no formal seed producers in the area. They also bring seeds from Upper Awash Agro-Industry Enterprise. With the technical support from FAO that situation is being reversed; certified seeds have been imported and mother plant orchard for seed production of citrus have been established, the seeds will be afterwards used to raise seedlings that once grafted with the selected and imported varieties will produce healthy and high-quality plants to be distributed to farmers. Mother orchards for the multiplication of selected varieties have also been established. Non-grafted seedlings take about 6-8 years to bear fruits while grafted plants can start the production of fruits at the third year. Currently the nurseries are producing grafted plants of orange, lemon, lime and other citrus species.

FAO is providing them with shed nets, plastic sheets and others materials necessary to undertake the fruit nursery. Getachew is not sure if the desired result is achieved in FAO project life span. He is of the opinion that the organization would keep supporting this promising

“Cactus has so far been neglected. But it is a very useful plant. It can be used as food. It prevents soil erosion. It can also be used for fodder. Thus, it should be promoted.”

Getachew is happy with the relationship his organization has established with government structures. He said FAO is working closely with local agriculture bureau at regional, zonal and wereda levels. The agriculture bureau is of great importance to FAO’s development intervention in the region. It has a strong and efficient structure to reach farmers at a grass-roots level. Through the structures, FAO is able to get messages across to farmers about the benefit of the project. The agriculture and rural development bureau is also supplying necessary materials to modernize the nurseries, according to Getachew.

Getachew did not also forget to mention the contribution of Italian cooperation in financing this intervention is really well done by the Ethiopian government.

Another expert has also shared his views with Focus magazine on how he sees

process under the agricultural extension office. We are working with FAO on a fruit species multiplying project. I am also a coordinator of this project. It is only a year and a half ago that we started this project jointly. There is substantive improvement from time to time. We are able to enjoy the support of international expertise in modernizing fruit nursery. High quality plants have been also distributed to farmers in this area. There are promising outcomes. Before the launch of the project, there was felt a needs for highland fruit types. I was one of the experts to get the chance of going to Italy to bring home the fruit species. I also received appropriate training in Italy. The training is not limited to overseas. An expert in the field has come to Ethiopia twice to offer training to wereda level experts and model farmers.

“Awareness about highland fruits was low earlier. Now it is by far better. Even though we were aware of the potential of the land to grow highland fruits, we had no alternative supplier. We had concentrated only on tropical fruits. We had been working on avocado, mango and citrus. Now we have started working on almond, apple, apricot and plum.”



Fruit Nursery in Enticho

activity until it becomes a full-fledged self-reliant venture.

Getachew also explained why particular attention is given to the cactus plant.

activities under way in Tigray region in the horticulture sector with FAO support.

“My name is Mulugeta Belema. I am an officer on technology multiplication

Mulugeta was asked why a special focus is given to fruit species. He says there is sufficient potential to grow horticulture species in the Tigray region. He admits that problems related to perception, knowledge and market had hindered horticulture development in comparison to other regular crops. Mulugeta is very enthusiastic about cactus plant development undertaken by the project. He told Focus that an expert is sent to Mexico for training on cactus development.

“Cactus is abundantly available in our region. We are grateful to FAO for the support we are enjoying on this particular plant. We have collected samples of all cactus types in our region. We are now in the process of identifying best varieties to develop. We have prepared a big demonstration site where we show farmers the variety to develop and methods of cultivation. We are going to share with farmers experiences gained from Italy and Mexico on the multiple uses of cactus. We are exploring ways of selecting and processing the best cactus

variety with a view to marketing and replicating the practices to other parts of Ethiopia. FAO has told us the project life span is two years. We believe we can do better given there is a possibility of extending the project life span.”

Mulugeta also mentioned about the support of government funding this project is very much appreciated.

Frew Eshete is nursery foreman at Hormat site, in Kobo wereda of North wollo zone of Amhara region. He has been there since 2001 when the site was known as Dinsho Seed Station. It was a forestry site. It is now known as FAO fruit and vegetable seedlings production center. Frew has more to say.

“This site is run by the wereda agriculture and rural development bureau in collaboration with FAO. The area under cultivation is between the range of 5-7 hectares. Orange, mango, coffee, banana and other varieties of fruits and vegetables are grown here. For some two years i have been working with FAO. We are introduced to different irrigation schemes. We are also well staffed. We keep the water in cemented reservoirs. We have diverted the water from a nearby river. Everything is fine. I am sure farmers will reap a good harvest in the near future.”

In the company of FAO sub-regional Representative Mr. Mafa E. Chipeta and the Italian Ambassador Mr. Raffaello de Lutio was able to visit Italian-funded project in Tigray for three days and found out that the agricultural structures there were operating very well in perfect understanding of the intended objectives linking it with the various organizations and bodies involved. The cooperation between the various stakeholders there was perfect. In all centers visited, the logo of Italian cooperation was clearly visible along with FAO's and the government and the role of Italy was promised in it. On another note, the cactus pear project activities are at an advanced stage with great commercial prospects and with the income derived from its sale, the standard of living of the local communities could benefit substantially. Regarding the introduction of new species of fruit trees that could adapt to local climatic conditions, it is still in the preparatory phase and the study will have to be revisited within the next fifteen months when the first products are reaped. On the whole, the project is rated positive and it is now possible to prepare the following phase of commercialization that follows the production stage.

The cross-sectional accounts presented in this piece are, indeed, incredibly motivational. In a country where the farming system is dependent on age-old

methods and focused on certain crop types. FAO & Rural Development Bureaus endeavors in horticulture development stimulate optimism to transform the farming sector for the better. ■



FAO Sub-Regional Officer and Italian Ambassador on the field visit

# The Goal of FAO is to Alleviate Poverty:

## Giuseppe De Bac, International Senior Advisor

**M**r. Giuseppe De Bac was appointed by FAO as the International Senior Advisor (SPA) for the projects in Ethiopia. The Focus reporter had a brief encounter with Mr. Giuseppe during his visit to the project sites when he had a brief chat with him. Excerpts:

*Thank you very much for giving this interview to Focus magazine. Would you tell me your name and position?*

I am Giuseppe De Bac and I am senior project advisor of this project.

*How many nurseries do you have in Tigray region?*

In Tigray, we are giving technical assistance to 22 nurseries, scattered around the region.

*What about in Amhara region?*

In Amhara region, specifically in North Wollo, we are assisting around 10 nurseries.

*Why did you decide on developing only fruit nurseries?*

Since the beginning of the project, our focus was to strengthen the fruits nurseries because, actually, the project was born with the request from the government of Ethiopia and to be more specific from the bureau of agriculture of Tigray to have a project on strengthening fruit nursery production. The improvement of Beles production (cactus pear) is also part of the project. It has been included because it is very important for Tigray and because it is mainly related to production at farmers' level.

*When did you start to establish these nurseries?*

We started to strengthen them and in part to establish new ones in July 2007 when the project was initiated. I should stress that previously in 2004 and 2005 I was working in Tigray for an emergency project that was also focusing on fruit

production aspect. Therefore, FAO secured with the current project a kind of follow-up. The project was proposed to FAO in due time and after a few months, a pledge has been provided by the donor, the government of Italy, through the Italian cooperation fund.

*How many types of fruit species do you have?*

In the two regions, specifically in Tigray and in North Wollo and in Waga Hamra zones, which are part of Amhara, we have three kinds of fruit nursery that vary according to the agro-climatic condition of the areas, respectively, tropical, subtropical and temperate. In tropical climatic conditions, mainly papaya, mango and avocado are grown. In subtropical conditions mainly guava and citrus, which means respectively oranges, lemons and mandarins. In the temperate zone we are

This is the most important issue of a successful programme of development. The bureau is our counterpart and, thanks to its commitment, we together are achieving important results to the benefit of the population of the two regions. I can say without doubt that in the 20 years of field work with FAO, I never experienced such an encouraging form of collaboration from a host Government. The commitment of the Bureau of Agriculture is crucial to our joint final success.

*Is it your first time to work in Ethiopia?*

No, it is my third time. I was here in 1991 and in 2004-5 working for the FAO emergency programme. In February of 1991, I came to Ethiopia to help a FAO project on Horticulture assisting the Institute of Agricultural Research in Adama.



promoting temperate fruit species. In this case we brought some new species from Italy that were never tested before in Ethiopia, so far the performance of the introduced temperate species like apricot, almonds and plums is very encouraging and farmers are showing great interest.

*Are you working in collaboration with the bureau of Agriculture?*

*As you told me, you have 20 years of experience. Where have you been working all this time?*

I visited several countries in Africa, especially in East Africa. I have been working also in East Asia and in Latin America.

*As you told us, beles or cactus production is very important. How do you intend to develop it?*

Beles(cactus) is also an important component of the project together with other fruits. In Tigray, Beles(cactus) is, I would say, the main crop when we are talking about horticultural crops. It could also be considered the main fruit that is grown in the East and South part of Tigray. We want to promote the rational utilization of the plant, more specifically you can consume the fruit and the young leaves, but also obtain several products from the processing of the plant. Some people are aware of it while others are not. So we are trying to train them, specially the women and the children. The better utilization of cactus means to introduce it in the diet more widely. In this respect, we have obtained very good results in the cactus promotion not only at the farmers' level but also at family level.

*Do you think you are successful in starting this program in these areas?*

Absolutely! As I said, it is almost 20 months since we started the project and we are very happy about the results achieved so far. However, fruit trees are perennial crops so that after another three years will get tangible results at the farmers' level.

Beles (cactus) is a plant that needs to be promoted further, especially in North Wollo and Sekota. Those are the two areas where Beles is not well known. So we would need more time to promote it.

*I have heard that your project is a two-year program. Will it continue?*

Hopefully the project started in July 2007 and it will finish in July 2009. Two years are not enough to achieve the ultimate goal: provide the technical assistance to the farmers. We just reached the farmers in the last two months, after having a very promising phase at nursery level. The marketing aspect has not yet been fully exploited since it was not included in the project due to the short duration. Therefore, a minimum of an additional three years would make the programme of development fairly complete.

*What are the major challenges you are facing while running the project?*

The main challenge, I have to say, is the timing, because 24 months are really a very short time for a fruit development project. Despite this, I would say we did well, considering the huge area we are covering.

*What is your plan if the project is going to continue?*

If the project continues, it would focus on strengthening more what we have already achieved at farmers' level and at the nursery level. So, the improvement of the quality of the production of fruit planting materials is one priority. The second one is to enlarge what we are doing on cactus production at farmers' level, to produce more quality fruits and to especially upgrade the postharvest practice of beles (cactus) in order to sell and eventually trade a better quality fruit. All of this is related to the marketing aspect.

We would need better quality product and better marketing to be also prepared for a possible export in the future.

*Do the farmers like this type of fruit?*

They like it very much. We had some training directly with the farmers. I was present at the training and I have a good feedback from them. They are very interested. They are eager to continue and to adopt our technology and the FAO technical advice.

*What is your wish for Ethiopia in terms of food security?*

My wish for Ethiopia is to keep promoting diversification. I think this is a key, together with increasing yields which is only achievable with the increase of inputs (i.e. fertilizers). Horticultural crops are important in this context, and Ethiopia has a great potential. As proven also by the experts who came from Europe recently to visit the project areas, they were really amazed by the potentiality offered by the different agro-ecological zones here in Ethiopia: it is possible to grow all sorts of crops, from tropical to temperate.

*As a professional what is your suggestion to others?*

Now Ethiopia is making incredible efforts in improving communications and roads and this will give an opportunity to farmers to have better trade. If I would be a farmer I would really go for diversification; to grow my vegetables and my fruits both for my consumption and for sale, improving day by day the quality and care of my harvest, in order to be always competitive in the market.

*Do you have anything to add?*

Our primary goal is to alleviate poverty. With fruits, you don't only increase the nutrition supply of the family but you also give farmers the opportunity to generate additional income. ■