



Global Horticultural Initiative video conference on



Urbanization: Market opportunities for horticultural sector

Madagascar Position Paper

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Acronyms

ADRA	Adventist Development and Relief Agency
AVRDC- The World Vegetable Center	Asian Vegetable Research and Development Center – The World Vegetable Center
CAM	Centrale d'Achat de Madagascar
CARE	Cooperative for Assistance and Relief Everywhere
CBO	Community Based Organization
CDA	Conseil de Développement d'Andohatapenaka Centre de coopération Internationale de Recherche Agronomique pour le Développement
CIRAD	
CEFFEL	Centre d'Expérimentation et de Formation en Fruits et Légumes
CMAM	Community Management of Acute Malnutrition
CNN	Conseil National de Nutrition
CRS	Catholic Relief Service
CSB	Centre de Santé de Base (Basic Health Centers)
CTHA	Centre de Technique Horticole d'Antananarivo
CTHT	Centre de Technique Horticole de Tamatave
EDSMD	Enquête Démographique et de Santé de Madagascar Equipe Permanente de Pilotage du Pprogramme d'Action pour le Développement Rural
EPP-PADR	
ESSA	Ecole Supérieure des Sciences Agronomiques (College of Agronomy)
FAO	Food and Agriculture Organization
FNUAP	United Nations Population Fund
FOFIFA	Centre National de Recherche Appliquée au Développement Rural
FTM	Foibe Taontsarini Madagasikara
GRET Nutrimad	Groupe de Recherche et d'Echanges Technologiques - Nutrition Madagascar
GTZ	Gesellschaft für Technische Zusammenarbeit
INSTAT	Institut National de la STATistique
IRD	Institut de Recherche pour le Développement
MDAT	Ministère de la Décentralisation et de l'Aménagement du Territoire
MECI	Ministère de l'Economie, du Commerce et de l'Industrie
MFB	Ministère des Finances et du Budget
MINEFI	MINistère de l'Economie et des Finances
MINSANPFPS	Ministère de la SANté Plannification Familiale
ONN	Office Nationale de Nutrition
PNAT	Plan National d'Aménagement du Territoire
PNDR	Politique Nationale de Développement Rural
PNN	Politique Nationale de Nutrition
PNNC	Politique Ntionale de Nutrition Communautaire
PNSA	Politique Nationale de Sécurité Alimentaire
PPRR	Projet de Pomotion des Revenus Ruraux PROgramme de Soutien aux Pôles de micro-Entreprises Rurales et aux Economies Régionales
PROSPERER	
PSA	Programme de Sécurité Alimentaire
PSDR	Projet de Soutien au Développement Rural
QMM	Qit Mineral Madagascar
RUFT	Ready-to-Use Therapeutic Foods
SAF/FJKM	Sampan'Asa momba ny Fampandrosoana/Fiangonan'i Jesosy Kristy eto Madagascar

SAHA	Sahan'Asa Hampandrosoana ny eny Ambanivohitra Surveillance et Education des Ecoles et des Communautés en matière de
SEECALINE	Sécurité Alimentaire et de Nutrition Elargie
SIRSA	Système d'Information Rural et de Sécurité Alimentaire
SNAT	Schéma National d'Aménagement du Territoire
SNUT	Nutrition Service of the Ministry of Health
SSAG	Service de la Sécurité Alimentaire et de Gestion des Urgences
UN HABITAT	United Nation Habitat
UNDP	United Nation Development Programme
UPDR	Unité de Politique de Développement Rural
WFP	World Food Program
WHO	World Health Organization
WTO	World Trade Organization

1. Introduction

Africa is rapidly urbanizing, and by 2020 almost half the African population will live in urban areas (Rosegrant et al., 2001). Each country needs to be ready to figure out all challenges that this unavoidable urbanization will cause, in particular the fresh products as fruit and vegetables' supply from production rural and sub urban areas to towns and cities. This will be an engine for most national market developments and opportunities. Madagascar is a developing country categorized within the populating country class. Malagasy society is rapidly moving from rural to urban, with cities and towns expanding, in terms of not only population growth, but also space as well. Many urban areas are growing because their rural hinterlands are depressed, which forces impoverished rural people to move to the cities in search of work. They are taking up more space and encroaching on rural and agriculturally productive land. This situation is gradually worrying especially about food sufficient and supply, and particularly about good quality of these populations' nutrition: "it is hazardous to underestimate the impact of demography on the world's food situation..." (Charvet, 1987). The economic development needs a healthy active population. It is noted that "in the major developing countries, the small food availability per person comes with narrow pallet of consumed products and from few crops. Malagasy population, except the upper class in the society, always lives on malnutrition, under nutrition and even famine in some areas. "Malnutrition, under nutrition and famines are not only due to insufficient production but to marked poverty situation too (CHARVET, 1987, p.8). The urbanization has to be seriously considered because «diets may change rapidly, particularly in towns: rural depopulation cause perturbation in diet habits. The fact is change in that such diet habits in many cities and some country sides in the tropical world. It is promoted by education policies which contribute to popularize new models of diet. (CHARVET, 1987, p.15). Nevertheless, fruits and vegetables from local horticulture production are not really an important part of Malagasy people diet, in which rice predominates while, in developed countries, "fruits en vegetables consumption rates are important" (CHARVET, 1987, p.20) " with 70kg of fruits and 95 kg of vegetables per person and per year" (CHARVET, 1987, p.29).

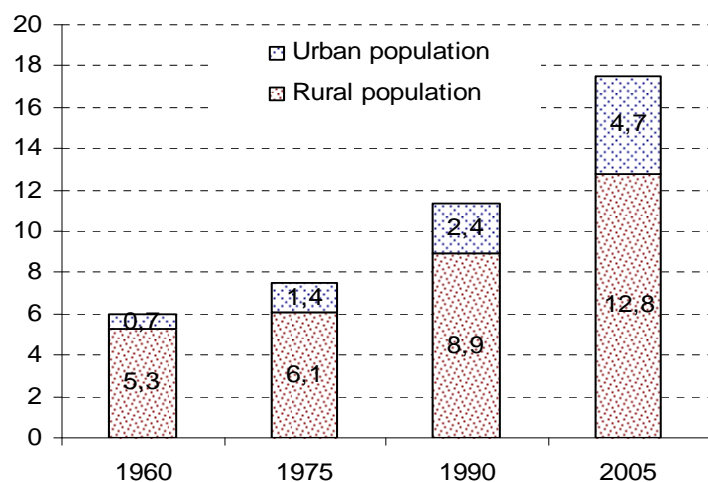
2. Present status of urban growth in ESA and consequences for horticultural production to supply cities

2.1. Urbanization in Madagascar

Madagascar urbanization rate is (27%). Even behind the southern Africans countries which are (35%), the cities are facing an important population growth due to increased demography of each city and to the migration from rural to urban areas.

This accelerated growth is a general phenomenon over the country space. The among of more than 5000 inhabitants' cities passed from 33 in 1960 to 172 in 2007, so an average rate of 3,5% per year. Antananarivo the capital gathers more than 30% of urban population of Madagascar. The figure 1 shows the population growth since the independence to 2005 (SNAT 2010). With the demographic growth rate with 2,7% and a continue urbanization, Malagasy people will reach to 43,5 millions around 2025 and 45% of those will live in urban areas.

Figure 1: Population growth in million habitation

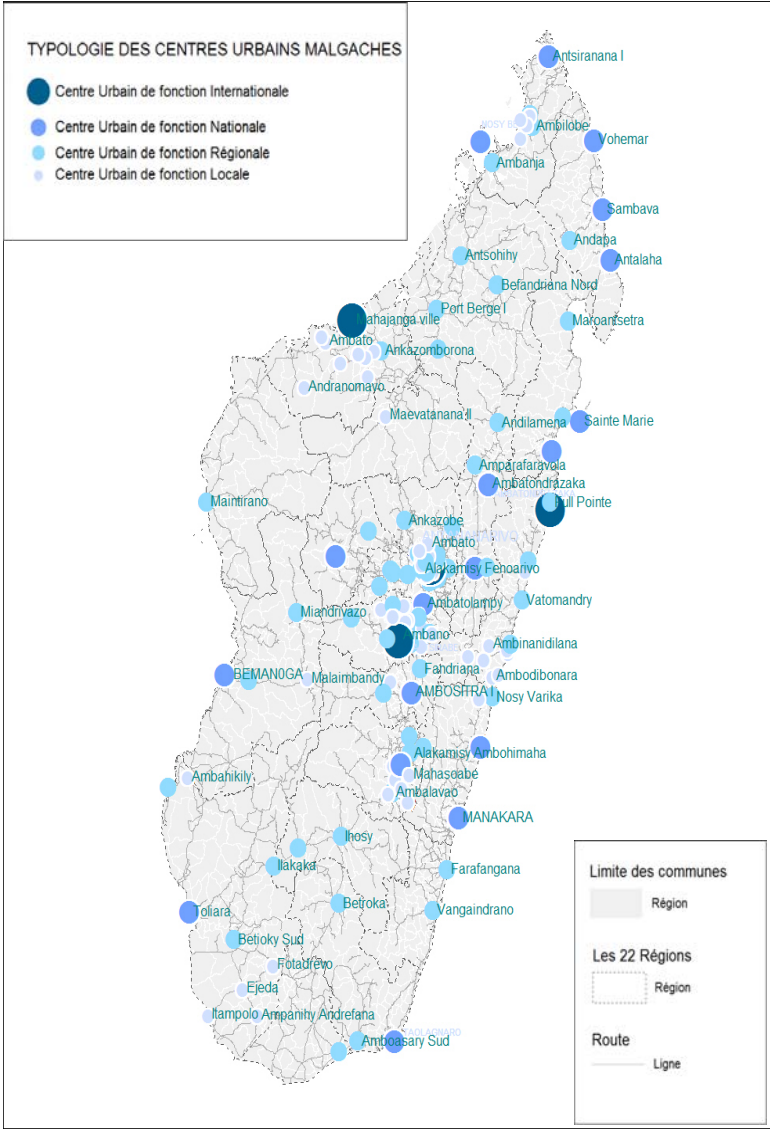


The population of Madagascar in 2008 increased three times more important than in 1960, the urban population increased seven times more and the rural population two times more than in 1960. The urbanization level passed from 11% in 1960 to 19% in 1975 and to 27% in 2005 (MDAT, 2010).

2.1.1. Population concentration

Central and eastern parts are the most inhabited regions. The density of population is important over all the ex-province of Antananarivo (more than 100 persons per km²) (SNAT 2010, vol. III). Like numerous Malagasy cities and those of the Third World, there is a big difference between structured districts and new under-integrated ones. (C. RAMIARISON, nd). The map 1 shows the different classes of urban centers and their importance especially in external relations. (Source: FTM).

Map 1 : Malagasy urban centers



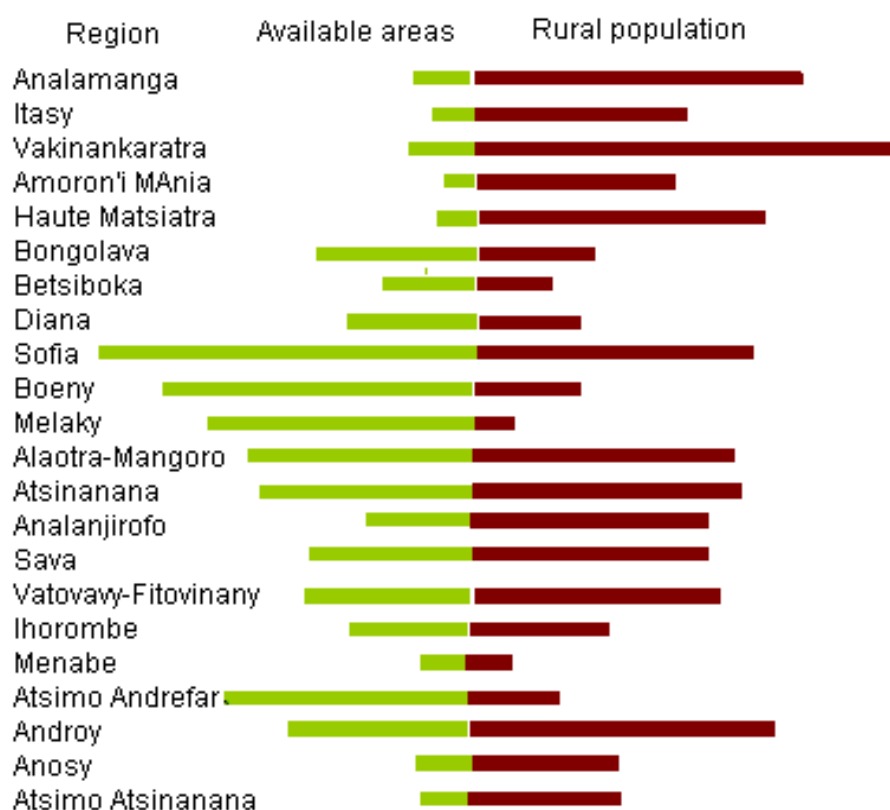
The proximity of the demand motivates the creation of a market more than the proximity of the supply, in Madagascar. The more the market is important, the more direct and indirect jobs are created which will be very attractive for migrants.

The link between producers and consumers represents the passage from subsistence to a market economy, which intensifies exchanges between cities and between cities and their hinterlands too

(SNAT 2010, vol. I). Yet, the agriculture shows stagnation since some years. (SNAT 2010, synthèse cartographique)

“... the agricultural activities growth is very small compared with demographic growth. [...] the productions increased rate will be absorbed by the demographic growth rate” (RASATARISOA, 2008, p.36). Nevertheless, a part of rural population in some regions is obliged to leave because of the limited of surfaces which can be cultivated. This following graph shows the actual situation about the importance of rural population vs. available areas.

Figure 2 : Population/available area



Source: SNAT, 2010.

2.1.2. Further tendencies

City growth implies sub urban production extension and or intensification as most of the vegetable produced inside the city become unsafe due to toxicity caused by waste. Consumers increase and production should follow the pattern. Competition within agriculture and construction develop more and more. The data combination of 1975, 1993 and 2005 from INSTAT permits the establishment of the following populating tendencies:

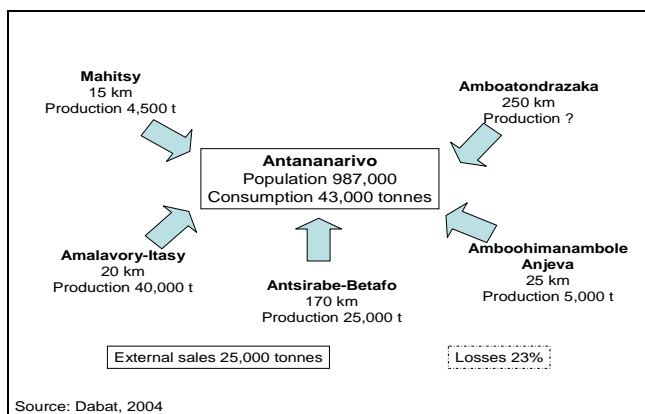
- Predominance of the characteristic rural population which will be maintained until 2035 where a projection shows 51% of urban population and 49% of rural population;
- High concentration of inhabitants in the Center lands and eastern parts of the island, followed by a marked population growth localized at the south-west and north-west of Madagascar;
- Migrations preferences to the cities which get good universities for study, for abilities transfer and investment opportunities;
- Willing to integrate into the work market without survival needs
- Early children activities... etc.
- The evolution to the urbanization would decrease the number of persons who work in primary sector and the development of agri-business. (SNAT 2010, vol. III)

2.2. Fruits and vegetables in Madagascar

2.2.1. Value chain status

Fruits and vegetables are found over Madagascar with their appropriate agro ecological zones for some specific species. The recorded annual productions for the main products reach more than 600,000 tons with banana and litchi domination. Researches on horticulture are done in many agro ecological zones, mainly for fruit trees. Vegetables research is undertaken by AVRDC from 2008. Seeds used are mainly from informal system generating low yield. Horticultural farming products are characterized by an important variability of the supply which is caused by some determinant fact such as crop seasonality, uncertain evolution of cultivated surfaces and the cultural constraints like water management, pest proliferation. Specific fruits are produced on specific regions of Madagascar. Vegetables are more and more developed in sub – urban due to the increased demand in the cities. Most of vegetables are sold to local markets. Fruits like banana, litchis... are exported but some quantities aside standards are dumped to local market place or processed by professional societies and/or by informal enterprises. Some producers group within a CBO and get better price through direct supply to supermarket.

Figure 3: Tomato flow to the capital



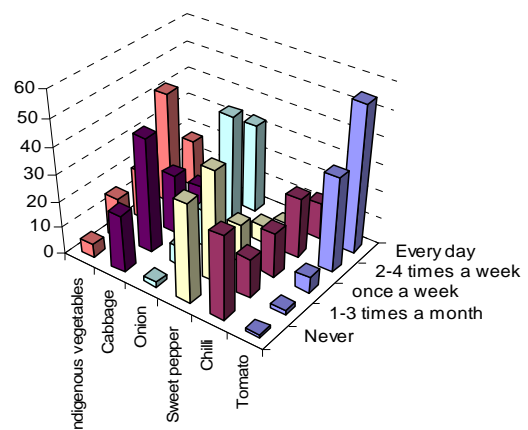
According to the tomato case product flow, the mean annual quantity of tomatoes consumed per person in Antananarivo in the capital was estimated to be 44 kg with the total quantity consumed being 43 000 tonnes, supplied from the surrounding areas with Itasy and Antsirabe producing the bulk of this figure 3. At the same time transport and other marketing losses were estimated to be 23% of production (N'Deiner, 2005)

Prices rise during the rainy season (from January to April), remain high until June due to lack of supply as most of the vegetables are difficult to be produced during hot rainy season (low yields, pest infestations...).

New varieties of tomato adapted to the rainy hot season are developed by AVRDC and seeds are produced by seed companies and start to be at the seed market. Farmers who manage to produce tomatoes during rainy season despite their poor shelf life are able to sell this produce at very high prices.

For the consumption, most households described the quantity of vegetables consumed at home as very little or none, reflecting the importance of vegetables as a cash crop, as the freshness demand is important in the cities. The figure 5 shows that tomatoes were eaten either every day or at least 2-4 times a week by over 90% of households with onions being eaten as regularly by over 70% of households and indigenous vegetables by 60% of households. Other vegetables were consumed less regularly (baseline survey, AVRDC 2007).

Figure 4: Vegetable consumptions



Beside the mains cities consumers through open markets, supermarkets, restaurants..., the mining companies have a significant share of fruits and vegetables market for their personnel. CAM or Centrale

d'Achat Madagascar delivers monthly about 50 tons of fruit and vegetables for SHERRIT, Ambatovy project exploring cobalt and Nickel.

2.2.2. Challenges on horticulture value chain

Fruits and vegetable organisation challenges are situated at many levels:

- Production levels:
 - poor seeds quality, limited production surface, uncontrolled pests leading to limited quantity and poor quality products for many producers;
 - unsafe vegetables produced inside the cities for consumption;
 - irregular production supply, sometime over abundance and sometime very insignificant;
 - post harvest handling for perishable products less managed;
- Market levels:
 - Market dominated by middlemen and non professional opportunist contributing to price variability over the year;
 - Limited access of producers directly to market;
 - Limited market organisation at producers levels;
 - Limited market information;
 - Limited specific transport for perishable product
 - Vegetable quality products at the market;
 - Consumers preference on low price not the high quality products which can cost higher;
 - Limited expertise and stakeholders coordination

2.2.3. Opportunities for horticultural value chain

- The presence of AVRDC developing new varieties and supporting seed companies create new seeds and variety fashions and encourage the users to purchase vegetable seed quality in affordable price.
- The extension of cities creates new opportunities for sub urban market despite the competitions between cities infrastructures and agriculture productions.
- Standards markets are still opened as well at national for safe vegetables as at regional and international levels for economic growth.
- Rural resources such as lands, water, and human are available for horticulture medium to big farms in the framework of green revolution and for market standards supply at national and regional level.
- Farmers' network will be enhanced to balance against middlemen.
- Small and Medium Enterprises Processing could be developed for horticulture add values.
- Demands from neighbouring islands are enormous and Madagascar is in a good position to supply them on fruits and vegetables.
- Vegetables consumption improves nutrition quality and by the time contributes to health improvement.

3. Present management of opportunities and constraints for supply chain stakeholders

The following institutions are concerned directly or indirectly by promotion of production, marketing and consumption of fruits and vegetables at Madagascar.

3.1. Ad Hoc Committee for management

CNN (National Nutrition Council) is a conception forum, deliberation, consultation, orientation, and control of the main goals of the Nutrition National Policy (PNN). CNN is composed with Senate representatives, National Assembly, concerned Ministries, civil society and private sector. ONN (National Nutrition Office) organize meetings every second Wednesday of the month to facilitate the strategy making about nutrition and food security activities and programs. Public and private sectors meet to discuss about each agency work and activity, to built strategies, and share tasks.

WFP (World Food Program), UNDP, FNUAP, UN HABITAT, FAO/WHO work and support several nutritional development projects at Madagascar. SEECALINE Project, supported by the World Bank, integrates «Agriculture support» section to improve food security and nutrition of the households and vulnerable communities. European Union and Japan government gave assistance to the public entities concerned by the reduction of malnutrition, and by the improvement of food security at Madagascar.

3.2. National policy on horticulture development

There is no specific policy, law, or program intended to promote fruits and vegetables for health. This activity is integrated in some actions of several national policies intended to nutrition, health and food security such as National Food Security Policy. Fruit trees program launched by the Ministry of Agriculture this year is on way for realization.

Health – Nutrition – Agriculture is an integrated policy by indentifying the malnutrition information and focused by home garden through ONN in collaboration with NGOs and projects.

3.3. National organisation involved in horticultural promotion in sub urban

Public entities: concerning the public establishments as Ministries with its programs MDAT (Ministry of Decentralization and Territory Management), FTM (Madagascar Map Center), INSTAT (STATistical National Institute), MinAgri (Ministry of Agriculture), UPDR (Rural Development Policy Unit)

Universities: Agronomy College, Department of Agriculture, Agro-Management, and Food Processing for research about agriculture and technical practices improvement, urban and sub-urban horticulture and agriculture, market opportunities for agricultural products, transformation of agricultural products...etc; University of Antananarivo, Geography Department: some researches are made concerning urbanization, urban and sub-urban horticulture and vegetable: Sciences Faculty, Department of Nutrition, Vegetal production: research about nutrition and agricultural improvement in many areas of Madagascar;

Research Institutes: FOFIFA (NARES), AVRDC, CIRAD, GTZ, CHTT, CTHA, CEFFEL are the main concerned by fruits and vegetables research institutions

Private entities: implementing actions for food security, fight against malnutrition, under nutrition and famine, healthy and balanced diet such as ADRA, CARE, CDA, CRS, SAF/FJKM, Malagasy Red Cross, International Federation Red Cross...

Program/project: on agricultural and horticultural productions such as PSDR (rural Development Support Project), PPRR (Rural Income Promotion Project), AGRISUD. CMAM (Madagascar's Community Management of Acute Malnutrition) is based on international experience with the use of ready-to-use therapeutic foods (RUTF) that are administered at the household or community level, as opposed to a hospital-based approach.

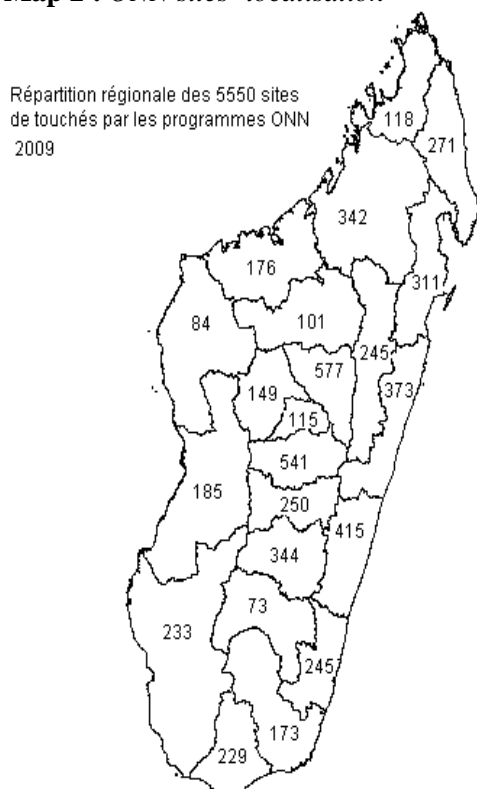
The national program concerning urbanization and its organization managed by the Ministry of decentralization and territory management has produced the PNAT (National Territory Management Plan) and SNAT (National Territory Management Scheme). PNAT and SNAT consist to make a spatial redistribution of the activities which could permit the market economy to grow and facilitate a sustainable space and economic management. There is a program to fit out the principle urban centers.

4. On going strategy

More and more numerous data demonstrate that a sufficient fruits and vegetables consumption contributes to prevent a large amount of diseases and protect health. With regard to this health benefits, it is better to consider fruit and vegetables as a broad food group rather than splitting them into

individual fruits or vegetables with a need to increase and diversify consumption of fruit and vegetables in general.

Map 2 : ONN sites' localisation



Source: ONN, 2010.

- ONN is charged of the implementation of the PNN, the technical coordination, evaluation, development and researches of the specific activities made by the different implementation agencies. The main program implemented by ONN now is the SEECALINE Project which cover 5,550 sites over Madagascar according to the Map 2; and oriented mainly on

- **Nutritional education** as an important mean to promote the consumption of the food which contains micronutrients in diversifying diets.
- **Demonstration plots** for technology transfer at community level.

Malnutrition rate reduce to 48% in Madagascar and to 20% in the ONN intervention areas. The program is still continued.

- FAO/WHO focus on
 - Awareness to increase consumption of fruits and vegetables
 - Promotion of fruits and vegetables production and consumption for health
- Sub urban projects deal on crop diversification, improvement and community market organization

5. Conclusion

The promotion of fruits and vegetables consumption needs to be clearly implemented in Madagascar mainly in term of market organisation and quality standards. Urbanization let the basic products local markets grown and rural producers need to have access to them. Exchanges between cities and the sub urban would to be eight time more important by 2035, so the transportation and commercial infrastructures linking cities and his surrounding area with other cities have to follow the same rhythm of growth. (MDAT, 2010).

REFERENCES

1. J.-P. CHARVET, "Le désordre alimentaire mondial _ surplus et penuries : le scandale", Edition HATIER, Paris, Septembre 1987, 265p
2. C. RAMIARISON, nd.
3. WTO / CTA, « Agriculture and the WTO in Africa: Understand to Act », Editions du GRET, 2007.
4. Guy JARDOT, expert BDPA, brochure sur « Professionnalisation de l'agriculture à Madagascar _ Réflexion sur les organisations intrerprofessionnelles », Septembre 2005, 28p
5. INSTAT, MECI, « Enquête démographie et de santé Madagascar 2008-2009 (EDSMDIV) », avril 2010, 444p.
6. RASATARISOA Mandrantovola, « Prospective territoriale et commercialisation des produits agricoles urbains _ Cas du deuxième arrondissement de la commune urbaine d'Antananarivo », Mémoire d'Ingénieur ESSA Département Agro-Management, 2009, 53p. + Annexes.
7. RAMAHEFARISON Heriniaina, « Analyse du marché des produits horticoles dans la zone de Majunga », Mémoire de DEA ESSA Département Agro-Management, 2006, 66p. + Annexes.
8. ANDRIAMAROSOA M. R. F. N., « Caractérisation de la pérennité de l'agriculture biologique en milieu paysan_Cas de l'association Mamabio Ambohimambola – Région analamanga », Mémoire de DEA ESSA Agro-Management, mai 2010, 42p. + Annexes.
9. Ministère de la Décentralisation et de l'Aménagement du Territoire, « SNAT _ Schéma National d'Aménagement du Territoire », 2010, IV volumes.
10. Rapport conjoint OMS/FAO/84, 9 novembre 2003.
11. Frans GOOSSENS, « Commercialisation des vivres locaux _ Le secteur informel dans une perspective dynamique », 1997, 80p.
12. N'Dienor, M.-H. Dabat, R. Ramananarivo, F. Randriamiharisoa, J. Rajoelison, C. Aubry, 2006. A Trend towards Urban Integration and Organization of the Tomato Subsector in Antananarivo, Madagascar