FOOD SECURITY IN AFRICA - WITH MAIN REFERENCE TO TANZANIA

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INTRODUCTION

This paper is concentrating on the sub Saharan African agriculture however with more emphasis on the Tanzanian Agriculture. Annex I gives a very brief account of the Tanzanian food security.

The agricultural sector is the leading sector of the economy in most of the sub Saharan countries including Tanzanian and accounts for over half of the GDP and export earnings. In Tanzania over 80% of the poor live in rural areas and their livelihood depends on agriculture. The main producer in the agriculture sector in the sub Saharan Africa is the small holder farmer. In Tanzania, the small holder producer has been able to contribute to the maintenance of a steady agricultural growth rate of over 3% per annum over the last decade. Although this rate is greater than the growth rate of the population, this rate is considered as unsatisfactory because it has failed to improve the livelihood of rural people whose major occupation is agriculture. This includes localised food insecurity and hunger that continues to be influenced by several elements being discussed in this paper which includes lack of access to and inadequate resources endowments at the household level. A recent statement by a senior donor representative in Tanzania, stating that **'Agriculture in Africa has no future'**, is a clear indication that the future of agriculture in sub Saharan Africa is very oblique. Much more effort is needed, including change of attitude of the national governments and the donors, if the livelihood of the majority rural small holder farmers has to prosper. As important as it is the social sectors (i.e. health, education, etc) need considerable support from both the national governments and the donors but not at the expense of ignoring the agricultural sector which is the biggest employer of the entire nation.

The contention should not be either agriculture or education. Both are needed urgently. An ignorant population is difficult to participate in anything, including improved agriculture. But agriculture should get more resources from other less priority sectors e.g. Administration and others.

Some quick questions that need quick answers include:

- How do national governments and the donors expect good education and medical care to a population of hungry people?
- In case the small holder farmers' income position will not improve, how will these rural small holder farmers be able to pay for their cost of education and health? Are the donors going to continue giving them aid forever? Logically, the small holder farmers' income position should be improved if they have to afford the cost of these very essential social services.

The answer to these two quick questions lies to a great extent in the improved small holder agricultural production.

This paper analyses the Sub Saharan small holder agriculture, discussing various challenges, opportunities and possible ways forward.

The text has been divided into to three sections:

(i) The first section comprises nine statements with some elaborations, the first statement being the longest of all;
(ii) The second section comprises seven questions and their answers; and
(iii) The third and last section comprises four annexes.

Examples from other parts of the world, to support and give a clear picture of the agricultural sector in the Sub Saharan Africa, have been included.

The authors firmly believe that there is a future for agriculture in the Sub Saharan Africa provided that right actions are taken in time.

SECTION I: STATEMENTS AND COMMENTS ON STATEMENTS

STATEMENT No. 1

Lack of interest and incompetence of government and its institutions and various donors and their organisations are the main reason for poor agricultural performance in Africa (Tanzania as an example). Social tension and bad weather are not the major reasons for the poor agricultural performance in sub Sahara Africa.

Several reasons can be given for this situation

1. Diversity

Extreme diversity exists between various African countries and within countries. For example, Rwanda has a very high population pressure, while Tanzania has a very low population density. The situation in Kenya is again very different, where comparatively commercialisation is much more advanced. A common factor in these three countries is that food security is problematic, whereas each country has a very different set of problems and opportunities.

Due to these country, and sometimes location specific diversity, it is rather difficult to develop for each situation realistic specific solutions. It is not wise to generalise situations and solutions, rather solutions should be for specific situations. In annex II of this report the diversity in conditions are clearly shown.

2. Confusion between various implementing agencies.

Due to the large variations in agricultural systems and backgrounds each actor tries too often on its own to find a solution resulting in:

a) a haphazard approach;
b) uncoordinated activities;
c) unhealthy competition between various actors (e.g. KAEMP and DRDP resulting that DRDP are not any longer in the agricultural development in the Kagera region, Tanzania);
d) Some projects lack focus of what they have planned to achieve. Such projects have difficulty in limiting their activities to a few well-chosen interventions with a reasonable chance of success. This leads to dilution of efforts, limiting impact and making it difficult to evaluate success or failure of the project. In Tanzania donors in the 1970's spent large amounts of money to finance the Integrated Regional development Programs (RIDEP's). Donors are still continuing to finance the District Rural Development Programs (DRDP).

For the above, the national governments are to be blamed for lack of vision, seriousness in developing the correct development path and vigorous defence of own plans and programmes. "The sub Saharan poor nations should have the courage of saying 'no' to the donor institutions for some issues which in the final analysis are not really beneficial to the peoples development"

3. Questionable priorities

In a typical Tanzania district it is normal to find 1500 primary schoolteachers, while the total extension staff in the same district is below 60 persons. From this very unbalanced teacher extensionist ratio it can be concluded that in real terms the agricultural sector is marginalized.

4. The primary school curriculum is not preparing the future farmers effectively.

It is a well-known fact that between 80% - 90% of the school leavers will not make it for further education after their primary school education, implying that agriculture sector should be a main aspect of their training. This is not the case.

1. Farmer approach and attitude

In a situation where subsistence agriculture is still of crucial importance farmers are in general more interested in security and the highest possible household income instead of the highest production per hectare or per man-day.

6. Continuity

Most projects lack continuity. This lack is caused mainly by very frequent transfers of both donor and government staff, as well by frequent policy changes in the development sector.

Each new minister in the donor country considers that he/she should break with his/her predecessor and should put his/her own stamp on the development. Two field example are:

1.0 Farm system research in Kagera. Each new researcher had a different approach and even a different crop. The first researcher started with beans and ended his term doing research on bananas, the second one concentrated on cassava, while the third one concentrated on getting the strained relations at the research station working again. Also the last researcher had to function to close the Dutch funding for this project. No breakthrough can be realised in such a working situation

2.0 Integrated rural districts programs were started in 1986 by the Dutch government in several districts. The main aim of these programs was the stimulation of the productive sector. Social sectors like education and health were completely out of these projects. Surprisingly within ten years main funding has now diverted to the social sectors and the government machinery, while stimulation of agricultural production accounts for between 3% to 10% only of the total involvement. Due to continuously changing directions very little can be achieved.

7. Study on streamlining of on going agricultural projects and programs in the context of the ASPS (Agricultural Sector Development Strategy).

In this report a review of the agricultural projects in Tanzania against the objectives of the present strategy of the Tanzanian government is given. The strategy consists of two main objectives: Higher productivity by which the income of the farm will improve. Secondly strengthening the institutional framework for agricultural development, e.g. enhancing the role of the private sector.

In total 48 agricultural projects are currently being implemented in Tanzania, with a total commitment budget of 533 million US dollars. With an annual allocation of around 110 million US dollars. About 60% of this amount is in the form of a loan, while the other part is a grant.

Some of the critical observations of this study are:

1.0 The overall picture in the donor supported agricultural development is one of a 'patch-work with many gaps', being the result of uncoordinated action.

2.0 All projects are advocating community approach, but in nearly all the projects the attention for 'beneficiary demand' seems more rhetoric and ritual than substantial.

3.0 The study reveals an impression of many project documents indicate the need for monitoring as a management tool, however the fact emerges that everybody thinks it is important but nobody knows exactly what to do about it.

4.0 Though the balance has swung too far away from capital investment towards the intermediate goal of capacity building. Quite often this means that 'capacity building' is the main objective of the project. The donor programs have contributed very minimally or shown complete lack of developing local capable experts to manage/take-over on going program management and therefore creating sustainability, and project ownership by the local experts which is more cost effectiveness in the project operation.

5.0 Instead of depending on government agencies, the programming and partly the implementation of agricultural projects in Tanzania is now far too dependent on the work of donor financed consultants.

6.0 Projects often address only one or two aspects of the production chain, ignoring the fact that every aspect has to be in place for successful development.

7.0 Projects tend to create parallel administrative structures, one for the project administration and the other for the government operation. Often the projects tend to create their own administrative structures in the name of becoming more efficient in achieving their objectives. Experience has shown that such arrangements are usually temporary in nature only lasting the lifetime equivalent to that of the project. After this period everything is dismantled including the good things the project has achieved.

8.0 Projects tend to orientate the recipient countries to be over dependent on project funding and project thinking. The almost exclusive funding of projects by donors is a prime cause of lack of sustainability. When donor funding ends, so does the project activity. In other words there is lack of sustainability.

All in all it can be concluded that donors are at least a major culprit for the failures in the development of the Tanzanian agriculture. Due to the fact that 60% of the allocations are loans, **the population in the third world has to pay for these costly blunders in the end**.

8. The national government oriented problems

There is a strong feeling that national governments of developing countries are also very important contributor to the inadequate performance of the small holder agricultural production. This has been as a result of the general government policies, which are not really conducive for the smooth and faster growth of the small holder farmer. In addition, although the responsible government and the politicians normally talk a lot about small holder agriculture development, agriculture has largely been ignored. The small holder farmers have, to a large extent, been left to struggle on their own. More specifically, the national governments have made the following mistakes, which directly or indirectly contribute, negatively to the small holder agriculture development in most of the African states.

1.0 Policies which are not favourable to the small holder development, are summarised in the following example;

1.0.0 The adoption of the world trade and agricultural policies without a critical analysis of the short and long-term implications of the performance of the small holder producer can be very detrimental to the small holder progress. For example, the globalization of the world trade and subsidy of the agricultural production by the developed nations is killing the small holder production in the developing nations. World Trade Organization policies expose the small holder farmer to unfair competition. The subsidized agricultural products from the developed economies and the globalization of trade are very clear disincentive to the small holder producer in the developing nations. Because there is unfair competition, due to the relatively cheap greatly subsidized food stuffs available in the developing world markets. In this respect the developed world is playing double standards. They talk of liberalization and fair competition in Africa but support subsidy and distortion of world trade at home. The responsibility of African governments/people, is to shout/reason/beg the developed world to change this.

2.0.0 The small holder farmer's development support by national governments has mostly been political (verbal) with little actual actions. Politicians are talking a lot about it but very little practical strategies are being developed and implemented. To a greater extent there has been blind copying or adoption of donor sponsored proposals before carrying out adequate analysis of what would be the outcome on the small holder producer. Below are some of the illustrative examples.

3.0.0 The adoption of the unified extension, and the introduction of the T&V extension methodologies in Tanzania from 1989 under the World Bank under the soft credit arrangement. To finance the National Agriculture Extension Program, (NALERP), latter on the National Agriculture Extension Program, (NAEP) which is still being implemented was not well researched before it was introduced. Actually it was imposed on the government. The then minister of Agriculture and livestock development has to sign, because refusal would mean the government was going to loose the money, including the Economic Recovery program (ERP) funding also from the world bank. In summary the World Bank sponsored extension in Tanzania had the following weaknesses which when added together results in achieving very little of what was expected.

1.0.0.0 A very top down extension approach, being controlled by the National office in Dar es Salaam, expected to deliver efficient extension to farmers via the regional and the district headquarters, before reaching the farmers.

2.0.0.0 Very rigid in its entire implementation. The workers and activities were very much controlled by the orders from the National office. 'A military type of implementation arrangement'.

3.0.0.0 While its implementation was supposed to be timely according to the agricultural calendar, its implementation was never smooth because of the problems of timely financial releases.

4.0.0.0 Unified extension and therefore T&V does not work for all the targeted production. It is more suitable for the seasonal crops like maize and rice.

5.0.0.0 Unified extension and therefore T&V is more suitable for the crops, and from its inception NALERP was more crops oriented. Livestock did not future highly, in other words the extension system undermined the livestock development.

6.0.0.0 When it was introduced, its promoters managed to establish the project as being the 'main extension program', ignoring and therefore marginalizing some 'smaller already existing for years extension projects'. These so-called smaller extension programs had their very useful field experiences, which should have continued in collaboration or completely, taken over by NALERP. However, because of NALERP's 'arrogance', it went ahead and ensured its approach taking the form of the national extension program.

7.0.0.0 NALERP and NAEP headquarters were/are in the capital city of Dar es Salaam which is very far, sometimes over 1500km, from the farming community it is expected to serve. Because of this very large distance, there has been a very big operational gap between the program and the farmers.

8.0.0.0 NALERP suffered great inadequacy in the implementation capacity of its front line field and district staff both in terms of number and the quality of training. This had/is limiting the efficient implementation of the delivery of the sound extension.

9.0.0.0 The government rushed into accepting NALERP as it was conceived; simply because it was a donor program which came up with the finances.

2 Because of the instructions from the donor organisations the Tanzanian government has adopted a policy of not supporting the training and the recruitment of the properly trained field agricultural and livestock extension workers.

1.0 All the nine Ministry of Agriculture training institutes in Tanzania, (LITI's and MATI's), with qualified training staff who are paid by the government, but most of them only doing very minimum agricultural training for the private candidates who can afford to finance themselves while others are closed. Instead donor programs are now stimulating the use of semi-trained (one week to a maximum of three weeks training) of 'bare footed extension workers' to be the front line extension workers. This has further weakened the extension service, which is already having inadequate implementation capacity due to its limited number of its front line properly trained extension staff with adequate practical training skills. The result of this is a vicious cycle of implementation capacity remaining deficient in many areas, especially at the District offices and at village level, which puts limitations on the acceptable scope and pace of development interventions. Many projects have failed to offer reliable management at the field level, resulting in huge implementation gaps though other required inputs may adequately be available.

10. The national governments are not allocating a fair proportion of the financial resources to the agricultural sector regardless of its enormous contribution to the National GDP together with it being the main employer to the majority of the people. For example in Tanzania Agriculture contribution to the GDP and FEE (foreign exchange earning) is summarised in the below table:

Agriculture's Share of Real GDP and foreign Exchange Earnings (FEE) in percentage (%)

YEAR	1987 –1990	1990- 1993	1994-1998	1998-2000*
CONTRIBURION TO GDP	48.2	48.4	50.0	50.0
CONTRIBURION TO FEE	55.0	56.0	56.2	54.2

* Provisional figures

It is sobering to note that over the period from 1991/2 to 1998/99 the central government spending on the Ministry of Agriculture and Co-operatives (including development spending) averaged just 3.5% of total central government expenditures. This does not including spending by district authorities. However, the combined total of 6.1% of central and district authorities expenditure on agriculture is minimal when comparing it to its contribution to export revenue and GDP as presented in the above table, in addition to providing employment to between 80-90% of the countries

1. The national governments have failed to offer effective research and extension, because it is a difficult and challenging subject, which may be difficult to achieve. Even though research and extension are perceived as key instruments of government intervention, research and extension strategies have not been successful in the past. As research (even adaptive) requires commitments over very long periods. Research plans need to be based on a careful economic assessment of the constraints facing farmers, combined with an assessment of the most productive research strategies for easing those constrains. At international level, dramatic breakthroughs have been achieved in relation to the productivity of food staples, by international research centres. Collaborative arrangements with international institutes exist for practically all-major and minor staples and other technologies. The key weakness is the continuing inadequacy of on-farm testing. The balance between on-station (basic, strategic, technology creation) research and on-farm research needs to be shifted in favour of the latter.
2. Rural credit provision has not been successful. The provision of credit is an area with important unresolved policy issues. There is very little formal credit available to support on-farm investment by small farmers. In some studies, small farmers have identified credit as a major constraint; this, however, in itself does not establish a case for credit promotion, as it does not constitute evidence that farmers could service debts at realistic interest rates. Fundamentally financial problems arise when an inherently risky activity is funded through debt, with only small equity involvement. It is not enough to tell smallholders to go to banks for the collateral issue is great. Also there is so much risk in the kind of agriculture we have that most farmers are scared to take credit less they lose even the little they have. What is important is more effort should be put in developing credit packages that are suitable for agriculture, like in kind credit arrangements and possibly using collective collaterals.

1 The artificial distinctions between export crops and food crops are unrealistic and misleading. The old distinction of cash crops (=export crops) and subsistence crops (=food crops) has long been misleading. Food crops are an important source of cash income and these, given the rate of urbanisation, are likely to become more important. Food production is also a significant source of export earnings, and could increase if the potential growth of cross-border trade is taken into account.

2 In the past the government intervention in the support of the small holder agriculture did not involve the participation and stakeholder by adopting a top-down approach that failed to involve the beneficiaries in design and their implementation. Despite the lip service paid to decentralisation and “bottom up” approaches, there are still no effective modalities for consultation and governance. Small holder farmers to some extent are forced by the existing laws to grow non profitable crops like coffee, which with the present prices if they had the full freedom would uproot them and plant more profitable crops of their choice. An awful lot is being expected of decentralisation and participation, with too little analysis of the local structures, which will have to carry the weight of these activities.

3 The National governments tend to adopt the over ambitious greatly expanded national programs, which have not tested to work equally well in all the regions. Before deciding on the expansion of projects in order to cover larger areas, it is very important to carefully consider all the projects’ strong and the weak points. When an introduction is done to a new area all the deficiencies will have been taken care of.

4 The national governments tend to make too frequent agricultural institutional changes, in which most of the instances the actors have to take time to learn how best to cope with the new changes thus negatively affecting the field delivery to farmers. For example the livestock development department have experienced seven changes on its institutional set up from the countries independence (1961) to date (2002).

STATEMENT No. 2

The African small holder is producing the bulk of the food for his own family and the increasing population in the urban centres.

Despite the unfavourable characteristics of the small holder farmer as listed below, the small holder farmer is still the main producer in the agriculture sector in the sub Saharan Africa.

Some characteristics of the small holder:

1 The farmer is partly included in the cash economy and partly in the subsistence economy. He is able to withdraw from the formal economy in case he feels that he is not benefiting from it.
2 Amount of invested capital is low.
3 The farmer does not have easy access to credit.
4 In most cases the small holder production is characterised by low productivity per unit area
5 The major aim of the farmer is trying to realise the maximum product for his family with a maximum of security.
6 Size of the farm depends on the source of power for cultivation. Farms with oxen are in general bigger then farms with only a hand hoe.
7 Farmer is more interested in crops, which give him a higher income per man-day than, the amount of produce per hectare, e.g. In Shinyanga region in Tanzania income per man-day for maize is 900 Tsh while for paddy it is 1600 for the year 98/99.
8 The majority of the farmers have the lowest education or have none at all.
9 In the Sub Saharan countries, they constitute the majority of the countries population.

STATEMENT No. 3

In the past the African small holder has increased food production through mainly opening up more virgin land, and only for a minor part through increased production per hectare.

Increased production per household has not occurred in most of the situations. In Tanzania the estimated marketed amount of maize was in the late seventies about 200 kg per household per year, while in the mid nineties the amount was just above 200 kg per household. The number of rural households has in the same period increased by over 100%.

STATEMENT No. 4

There are success stories in the African agriculture.

There are real success stories in the African agriculture, however they remain isolated. Donors and most African governments are not able to recognise and learn from these successes. They are not able to broaden them until they become the rule instead of the exceptions. Examples of successes are:

1 Rice production in Mali, where for the last 20 years production increased by 9% per year.
2 Doubling maize production in Kenya from 1980 until 1986.
3 Flower and horticultural sector in Kenya which is involving over 50,000 local farmers.
4 Increase of cotton production in Francophone Africa.
5 Tremendous increase in the dairy cattle herd in Kilimanjaro region after independence (mainly due to farmer's initiatives). The history of Kilimanjaro region should be a lesson for most of the developing nations. In Kilimanjaro milk marketing which was not very smooth going, did not stop the Kilimanjaro population from continuing with cross breeding the local Zebu cow in order to get a more efficient milk producer. Currently Kilimanjaro is the region with the highest number of dairy animals in Tanzania with over 140,000 cattle (pure exotics and their crosses of various

grades). Kilimanjaro native farming families only started dairy development in the mid-1960s when a total of 1000 dairy cattle were distributed by the Kilimanjaro co-operative Union 'KNCU' to its farmers. Before 1960 the law prohibited native farmers from keeping dairy cattle. The current dairy development achievement as far as native farmers are concerned has only taken a period of 38 years. Kilimanjaro farming system is very much similar to that being practised in Kagera, where dairying supports the entire farm.

6 Tremendous dairy cattle increase outside the previous known 'white highlands' in Kenya through subsidised AI.

7 Success in the dairy development in Kagera and Tanga regions in Tanzania.

Failure of recognising and scaling up the success can be demonstrated clearly with the closure of a very successful dairy project in Kagera instead of scaling up and building on the gained experiences. Dutch officials against the wish of the Tanzanian authorities closed the project.

The success stories remain isolated cases, separated by geographical and institutional divisions. With better utilisation of these successes, African agriculture could transform itself into a very strong sector on which future other sectors can grow e.g. agro-processing.

STATEMENT No. 5

Small holders can increase productivity per man-year or per hectare through increased capital formation, improving technical know-how, extension services and research. And finally through improving infrastructure like roads, markets etc.

In order to solve the stagnating productivity, all three aspects (capital, technical know-how and improved infrastructure) should be dealt with at the same time. A holistic approach is required.

1. Lack of capital:

1.1 Problem.

Modern farming with high output needs capital. As it is the case in various other countries return on invested capital is limited and in nearly all cases much lower than when this is invested in other sectors. Only a few branches in the agricultural sector are able to get commercial loans from the bank. Examples are the flower sector around Arusha town in Tanzania. Small holder farmers have two main problems of getting capital. Which are the lack of adequate security and secondly the return on the invested capital is lower than the capital costs in most cases.

1.2 Solution.

Stimulate various kinds of saving and credit schemes in the rural areas. One successful system is the DAIRY HEIFER-IN-TRUST and DAIRY- GAOT – IN TRUST schemes, which are managed as a credit facility in rural areas. Besides the technical advances like more manure better fed children, participating farmers are slowly building up a more capital invested farm. In Kagera region the value of a farm without dairy cattle is only about 50% of the total farm capital which has one or two dairy animals. Secondly, the community-based organisations managing the credit schemes in kind (like the heifer-in-trust) will slowly get experience in setting up saving and credit societies.

Inviting large-scale farmers from outside with sufficient capital will only increase capital to these large-scale farmers. But will not solve the lack of capital of the ordinary farmers with the exception of a few farm workers employed by these large-scale farmers who might gain experience and are getting special favours from their masters. Inviting these large-scale farmers will only create more social tensions and will increase the number of landless families, which is already becoming a problem in some of the rural societies in Tanzania.

2.Lack of technical know-how

2.1 Problem

Delivering appropriate extension service is the most difficult aspect in stimulating the agricultural production. Past failures were due to rigid top down approaches, in adequate skills and knowledge, poorly motivated and supervised staff, poor implementation resources (transport equipment's, salaries, and operating funds), etc. In sharp contrast with several Asian agricultural systems, nearly all-farming systems in Africa are very diverse. (The same applies for various agricultural systems in isolated hilly or mountainous areas in Asia). Due to this diversity, generalist solutions do not work. Most extension workers have too little skills of solving farmers' problems in this diverse situation. The government has its employed extension staff posted in the field throughout the country, but with very in-adequate work plans and targets. Last but not least, extension officers are in most cases poorly paid, they have insufficient tools and lack a proper working environment.

Concerning development of technical solutions the research section is working quite often in isolation. With the stimulation of farm system research, researchers have gone out more from their stations into the field. Some positive effects have been observed, however these effects are very minor and very expensive. A major shortcoming of these new initiatives is that the research station is taking over the extension service. Instead of training and strengthening the extension service quite often a fight for the funds and 'honour' is started.

2.2 Solutions

Improve the funding and the training of the future extension officers. The government should employ enough trained extension officers or otherwise provide subsidies to the field extension workers so that they may start private/commercial extension services delivery.
Although the private sector should be encouraged to participate in supporting extension, the Government has the primary responsibility to assist smallholders to access to good services. Because it has been demonstrated often that the socio-economic returns on public expenditure on extension are high.
The present extension generalists should ensure that they are being coached sufficiently by the proper subject matter specialists. In the past NALERP had subject matter specialists only at district level. This should have been at least at divisional level or even lower.

The use of semi-trained farmer instructors/motivators, though looking at it from a different angle, is negative towards the positive agricultural progress, however if sufficiently stimulated may contribute significantly towards the agricultural extension improvement. Also the use of semi-trained farmers motivators could increase the contact of more farmers with the extension service.

An extension service provider should be a servant of the farmer, instead of being the servant of the government. Besides a proper training in his/her technical field, the extension worker should have a better insight in the cost benefit results of the various crops and activities.

The three partners: farmers, extension workers and researchers have all an equal role in the stimulation of the productivity. Ensuring a healthy team work in which there is no place for arrogance of any actor is a precondition of improving technical skills.

Capability of learning from the previous mistakes and failures is very important in the development of the agricultural sector. Making mistakes or having failures is not a crime. The problem arises from the fact that quite often we are not able to learn the lessons from it. Instead, donors and governments focus on other sectors or activities instead of remaining in the agricultural extension but with improved strategies.

3. Lack of infrastructure

3.1 Problem

Poor roads and inefficient marketing structures and institutions, telephones, post offices, etc in rural areas are quite often the major problems. Another aspect is the very little say over the selling price of the crops they have produced. See present coffee prices.

3.2 Solutions

More private initiative combined with flexibility of the producer e.g. leave the coffee production for another more profitable crop and the stimulation of diversity in the system, in which a farmer can adjust in time his production system accordingly for future market situation, is very important.

4 Future expected breakthroughs

The below are the three most important proposals which may assist in the acceleration the agricultural productivity and production in the sub Saharan Africa. It is however necessary that for these to succeed, sufficient attention must be given to these proposals. These are:

1 Rice production: Rice breeding looks promising by offering very high yielding and improved varieties.

2 Cassava: Presently cassava is getting very little attention from farmers as well as from extension and other government institutions. This is an area where several million tons can be produced annually if more seriousness is adopted by the various National governments, donors and farmers.

3 Soil management: The African continent has only few fertile alluvial flood plains compared with other continents (exception is Australia with an extremely low population). Most soils are fragile and easily ruined by unsound farming. Improving soil fertility is possible through a combination of three approaches. These are the organic approach, chemical measures, and introduction of livestock into the system. Introducing dairy cattle has an advantage that the livestock products are improving the cash income on a regular basis, while at the same time improving the nutrients cycle in the farm. Other aspects are reduced tilling, and improved water conservation.

STATEMENT No. 6

International organisations could do more in the stimulation of the agricultural sector in Tanzania

In the past the Dutch government has had some success in the development in the sugar sector, rehabilitation of the cotton sector (mainly through input supplies, ginneries rehabilitation and construction) and the small holder dairy development. A small but successful cotton extension program was closed on orders of the main extension program funded by the World Bank. Another area where the Dutch donor assistance was used wrongly for the development of the food security in Tanzania, is the construction of immense big grain silos for handling imported/aid grains, instead on improving own food production.

Tanzania is blessed with the situation that it has three major climatic systems. Drought is occurring but it has never happened that all three major climatic systems had at the same time a drought. Good roads and a fair trading system between the various regions would ensure that each region should have each year sufficient food.

Other actors who could have a much more positive impact on productivity in the agricultural sector are organisations like WFP and UNHCR. These organisations are buying very little food from the local small holder producers where they operate. During an interview with some senior officers of WFP and UNHCR it became clear that these huge multinational organisations could not buy agricultural products from the local farmers and the small local traders, but only from big traders because of logistic easiness. Secondly that quite often the contribution of the rich countries to these multinational organisations consists mainly of food deliveries, hence no room for the local small holder producer to market their produce to these organisations. As an example to demonstrate this, in Kasulu district in the western Tanzania with sufficient land and good rainfall (see annex 2) UNHCR/WFP bring about 6,200 tons and 22,500 tons of beans and maize respectively per year for 150,000 refugees. With great difficulties farmers in Kasulu district are nowadays selling about 200 tons of beans annually via the bishop of the Anglican Church in Kasulu to UNHCR/WFP.

In other locations the imported relief food is even sold on the local market far below the local cost price, but such incidents are not common (according to our observations).

STATEMENT No. 7

Livestock has been neglected as a tool for food production increase and poverty reduction.

Attention for livestock has been very limited. The main funding in the agricultural sector is going to the crop sector. Though livestock sector contributes 18% of the Tanzania GDP it only gets 14% of the total 3.5% of the total ministry of agriculture budget. Over all this is equal to livestock sector only getting 0.49% of the national budget allocation via the ministry of agriculture. This is a clear indication of the under estimation of the livestock sector. Stimulation of livestock production will reduce poverty and increase both crop and animal related produce. Common advantages of livestock are:

8 Improved use of available resources and improved nutrient cycle in the farm. Crop residues are fed to cows while the manure is used for the crops, 'organic farming'.

9 Improving the nutrient status of children. Studies have shown that households with livestock have healthier children.

10 Buffer function. Livestock can be sold in situations when the households need urgent cash (due to poor harvest). Others related with this advantage are the livestock takes over the rural 'banking' role.

11 Regular income. In case with dairy cows or with dairy goats the family has a more regular income compared with the annual crop sale. Also quite often animal produce is fetching in general a higher price than crop produce.

12 Source of energy. The most common is the use of oxen, but also bio-gas is a possibility.

13 In arid and semiarid areas crop production is problematic while livestock production if properly implemented, will assure the inhabitants to these areas a reasonable economic activity.

STATEMENT No. 8

Africa should unite and most importantly develop a common market.

Togetherness means more power and strength. The United States of America is very strong economically and in other aspects because of the coming together of fifty two states. Similarly the European Union, which is in some stages towards becoming the united Europe, is in existence and is a symbol of economic strength.

In Africa there already exist several regional economic bodies like the SADAC, ECOWAS, PTA, EAST AFRCAN COMMUNITY, and others. There is a general consensus by the African heads of governments that Africa's unification should continue to be stimulated at the fastest rate possible aiming at creating the united states/republics of Africa.

The collapse of the East Africa community in the 1970's, which in its existance greatly benefited the general East African population has cased numerous economic suffering to the East African residents who are mainly the small holder farmers.

Border trade should be very much stimulated between neighbouring states. What is the sense of building a very expensive tarmac road between Uganda and Tanzania. When the coffee farmers in Karagwe district in Tanzania, neighbouring Uganda are not having the freedom to sell their coffee to Uganda at a much better price than that they are getting in their own district. As much as can practicably be implemented, border crossing restrictions and trade should be given full freedom in neighbouring countries especially if they are belonging to some form of economic organisation.

STATEMENT No. 9

Small holder farmers should go for better quality farm produce and more productivity.
As much as possible the small holder African producer should be made to realise that if he/she wants to sell the farm produce and at a better price. First there is very stiff competition between the producers of the same product within the farmer's village, district, region, country and the entire world.

The small farmer is therefore strongly urged to, (a) Be very efficient in his production so that the production price is low for better competition (b) The productivity is high per unit area by using scientific sound practices that is readily accepted by the market. (c) As much as possible the farmer should do the first processing at the farm level, in order to add value to his/her agricultural product before its marketing. Practices like coffee and cashew nut de-husking, etc, done at the farm using very simple technologies will ensure the farmer gets more cash for his/her product, in addition to using the primary agro processing residues to fertilise his/her farm.

SECTION II: QUESTIONS AND ANSWERS

QUESTION No. 1
Should the small holder or the large-scale farmer be stimulated in order to produce food for the increasing population?

Since a long time the talk is modernisation of the agricultural sector. However, very little is said about how exactly this modernisation should be carried out. According to most actors it is assumed that the small-scale sector has been unable to modernise itself. It is quite often forgotten that this same small-scale farmer has been able to feed twice as many mouths more than 25 years ago in a country like Tanzania.
As we all know this production increase resulted from a horizontal expansion of clearing more bush and forests, instead of through increased production per hectare. Due to the fact that land is still very plentiful in Tanzania, is it realistic to expect intensification? The answer is **NO**. This will only happen when farmers will start feeling that land is a scarce commodity. However even in Tanzania with its current plenty land, there are areas with very high population pressure (Kilimanjaro region, Arumeru district in Arusha region, Tukuyu district in Mbeya region, etc), where intensification is relevant. The question is to develop viable packages for intensification in such areas.

Due to the diversity it is difficult to say which factor is the most limiting aspect for improving productivity per hectare and/or man-day in the small holder sector. It is assumed that capital and credit are limited. If, however, a small holder has better access to capital, the question is whether this would result in a higher productivity. The answer is doubtful. Especially if it is observed what is done with the additional income in years with very high producer prices like some years ago for the cashew nut in Southern coastal regions of Tanzania.

QUESTION No. 2
Large-scale farms versus small-scale farms, what should the Sub Saharan African states go for?

Quite often it is assumed that large-scale farms have a high productivity per hectare. This is not necessarily true. What a manager of a large-scale farm is doing, is to make sure that his capital investment delivers sufficient returns. The advantage of a large-scale farmer is that he/she brings in a lot of capital in this agricultural sector. Large scale farming as it can be observed in other countries can be a big social disturbing factor in the overall development and therefore not an appropriate means.

Very briefly let us learn the Zimbabwean and the Kenyan experience large scale and the small-scale farms.
Experience gained in Kenya, where immediately after the country's independence, the government using the loan money from the British government, bought large pieces of land and carried out a massive resettlement scheme for the landless small holder farmers.

Currently Kenya is rated very high as far as its agriculture development is concerned, which is mainly dominated by the small holder producers.

On the contrary in Zimbabwe white settlers were outreached after independence everything fine for those white settlers. Because the white settlers have the capital it is rather easy for them to get additional or new bank credits to farther improve their agriculture compared to their black counterparts. Nobody in his or her right minds has ever questioned the urgency to solve the land issue. From reading the various publications related to Zimbabwe it is the black people of Zimbabwe who are encountering severe difficulties there. Both the large-scale farmers and the ruling party could have chosen to solve this issue years ago, like their Kenyan colleagues did. They had chosen not to and now they are reaping the nasty result of very un-proportionate land and finally wealth distribution. Un-proportionate land ownership will eventually result in very nasty social tensions. It is important to learn from the Korean and Taiwan's successes were as a result of a successful land redistribution story.

QUESTION No. 3
Can biotechnology and gene modified crops offer solutions for increasing the food production on the African continent?

Biotechnology and other advanced methods could develop several solutions of reducing diseases and pests. Especially in areas with erratic rainfall appropriate research in various root crops and sorghums could increase food production tremendously. An example of how research has assisted the dairy industry is the development of the ECF vaccine; others are breakthroughs in the control of tsetse flies.

An example in the crop production is the negligence of the stimulation of cassava production. It is assumed that the smallholder in Tanzania produces about 7 tons of dried tubers per year per hectare. In Thailand farmers are in average producing 25 tons per year per hectare. While some farms in South Africa are even reaching a production of 70 tons per hectare per year. Major attention has been given to maize, coffee and other common cash crops like tobacco and cotton.

It is however very important to note that the multinational companies like '*Monsanto*' which are developing the high yielding genetically modified seeds will choose to market seeds that they deem to be commercially viable, rather than allowing farmers to determine the types of crops varieties they wish to grow. The inevitable result of this commercialisation of the seed supply will be higher seed prices. In the developing world, this would be a disaster scenario. Higher seed prices are unthinkable in a context where food security is already precarious. In the developed world, critics argue that the spectre of increased input costs in the guise of higher seed prices may drive small farmers off the land, leaving farming to large-scale corporate farmers. This "industrial" model of rural "development" will only enhance the control of large multinationals over rural economies and communities. Big corporations will finally protect their intellectual patent rights to the extent that farmers throughout the world will have no choosing right of what variety of seed they would wish to grow.

Secondly, the Genetically Modified seeds can alter the traditional indigenous seeds some with excellent specific characteristics, by polluting them to the extent that the best traits are lost.

QUESTION No. 4
When should small holders opt for intensification?

The extensive versus intensive small holder farming practices.
Intensive farming under the small holder farming should be practised in proportion to the population pressure of the area. In areas with the highest population pressure should opt for the most intensive system, 'High input high output system' These are the areas where when talking of dairying, then talk of the 20 and over litres of milk per day per cow. This is the zone where the farmers need very close and accurate extension advice.

On the other hand the extensive farming is what most small holder producer will logically opt for in the African farming content. This is because of the vast land, which is still untouched. However the government through its regulatory mechanisms, should ensure that no over exploitation of the land is done by the small holders. Educating the farmers so that they can better understand the detrimental effect of the land over exploitation combined by the realistic local by laws that can be implemented. The extensive system is a 'low input low output system' in dairy production we should be talking of the 2-4 litres of milk per day per cow.

Small holders are opting for intensive land use when population density/square km is increasing. This process starts normally when bad effects of over exploitation are visible. A more intensive land use does not necessarily mean a higher production per household and more excess food for the urban population.

QUESTION No. 5
Should small holders opt for inorganic or organic farming?

The organic farming is nowadays becoming a very popular word in the western developed world. In the African small holder farming practice it is a practice which has been practised since the inversion of farming itself. It is the most common practice in the extensive farming system, though even intensive farming where livestock is part of the farm it is also practised.

It is a practice basically of crop production without using the industrial fertilisers, pesticides and the like to boost production. Because of their difficult access and their expensiveness, the small holder farmers have continued to produce their food and cash crops without the use of these foreign chemicals, which typifies their generally low-level productivity. It would be a big boost if these farmers could get better compensatory prices for producing the health friendly foodstuffs for the world market.

Scientists have invented the inorganic fertilisers, pesticides etc. to boost the agricultural production, in case there is no incentive prices for the organic farmers then the most logical way is to encourage the small holder producer to produce more from the proper use of these inorganic agricultural production inputs. Research findings and experiences from the so-called successful programs all have heavily relied on the proper use of these inputs. Then why should the small holder not also benefit?

QUESTION No. 6
Is the African Small holder farmer getting a fair price for his/her produce?

The answer is definitely **NO.**
This is because of two reasons, first from the unfair world pricing system where the buyers have formed their very strong clubs which are dictating the price they have to pay for the various farm produce, from the developing world regardless of the production costs involved.

As an example lets compare what the small holder coffee farmer of Kagera which he/she gets from one standard cup of instant coffee sold at a typical European restaurant/coffee bar. A typical standard one-cup of instant coffee is made up of 2gm of instant coffee. Three kilograms of green coffee beans is used to produce one kilogram of instant coffee. The Kagera small holder coffee farmer got a price of Tsh 80 per kilogram of green beans or an equivalent of Tsh 240 per kilogram of instant coffee produced by the instant coffee producing factory of TANICA in Bukoba, Tanzania. Using the above figures the following below table gives a summary of what the Kagera small holder farmer, TANICA instant coffee factory in Bukoba and the multinationas. Inclusive of the European restaurant, gets from one cup of instant coffee consumed at a typical coffee bar/restaurant in Europe (more specifically Athens).

Kagera Farmer and TANICA factory coffee income as compared to the price of the same coffee in Europe (a restaurant in Athens) AND the price of raw one kilogram of raw instant coffee.

	Selling point of instant coffee.	Selling price (Tshs)	% Comparison of what the Kagera farmer gets from one standard cup of instant coffee, (comparing factory price and one Athens restaurant price).
(***a) One cup of instant coffee***	Farmer price for one standard instant coffee cup made of 2gm of instant coffee	0.16	Not relevant
	Factory price (TANICA) in Bukoba Tanzania – one cup made of 2gm of instant coffee.	30.00	0.53%
	Selling price of one cup of instant coffee made of 2gm of instant coffee, at a coffee bar/ restaurant in Athens.	1535.00	0.01%

Similarly a comparison of what the Kagera coffee farmer gets from every kilogram of instant coffee processed at TANICA instant coffee factory in Bukoba Tanzania. The comparison prices are for the TANICA export (FOB Dar es Salaam) price and its retail local factory price in Bukoba. Comparing these with the local ordinary shop retail price in Bukoba, Tanzania and that of the chain store in the (Netherlands) and Japan as summarised below:

	Selling point of instant coffee.	Selling price (Tshs)	% Comparison of what the Kagera farmer gets from 1 kg of instant coffee (comparing factory with, local, Netherlands and one Japan store consumer prices)
(***b) One kg of raw instant coffee.***	Farmer price for one kilogram of instant coffee (equivalent to 3 Kg of green beans)	240.00	Not relevant
	Local factory price (TANICA) in Bukoba Tanzania – one Kilogram of TANICA instant coffee (packed in plastic bag).	6,080.00	3.94%
	Local factory price (TANICA) in Bukoba Tanzania – one Kilogram of TANICA instant coffee (packed in tins with TANICA logo).	12,500.00	1.92%
	Average Ordinary shop price in Bukoba Tanzania of one Kilogram of TANICA instant coffee. (Packed in plastic bag).	10,000.00	2.40%
	Average Ordinary shop price in Bukoba Tanzania of one Kilogram of TANICA instant coffee. (Packed in tins with TANICA logo).	15,000.00	1.60%
	Export TANICA (FOB Dar Es salaam Tanzania) of one Kilogram of instant coffee. (Packed in plastic bag).	3,724.00	6.44%
	Average European chain stores price of one Kilogram of instant coffee. (The TANICA instant coffee is blended with other blends and sold in tins or packets with multinational company trade name) Average price of US$ 22.0	21,560.00	1.11%
	Japan stores price (one) of one Kilogram of instant coffee. (The TANICA instant coffee is blended with other blends and sold in tins or packets with multinational company trade name) Average price of US$ 40.0	39,200.00	0.61%

It is very clear from the above two comparison tables that the Kagera coffee farmer gets very little of the final either local (factory and retail shop), or the consumer prices of export countries of Europe and Japan. The most benefiting actors in the coffee trade chain are the locals (Bukoba traders) and multinational companies involved in the coffee trade of any kind at any level. It is also clear that from the above two tables the traders, who finally sell the coffee to the consumer in Europe and Japan, benefit the most.

The second reason for the very low Kagera coffee price for the Kagera farmer is the very bureaucratic, inefficient, and anti small holder producer marketing system in place, which is to

a greater extent carried out by the state, run organisations and the local coffee buyers of the exporting countries. As an example, the coffee farmers in Kagera Tanzania are currently only getting about 25% of the coffee auction price offered by the external buyer or the exporters of the crop compared to their Ugandan counterparts who get between 70% - 80% of the auction price. Annex IV gives more explanation on why the situation is like this.

QUESTION No. 7

What should be done in the future?

Specific recommendations of improving the African small holder production levels have already been commented upon at statement and question levels above. However to stress some of the most important the following are recommended for a faster African small holder agricultural growth:

5. The three groups of problems (small holder farmer, national governments and the donor-oriented), that individually, partially or in totality contribute negatively should realistically be addressed, so that implemental solutions in the interest of the small holder farmers are found. However the most important solution should be realistic and practical solution to the farmers' local agricultural related problems.

6. A demonstration of a few successful programs have been made, it is strongly recommended that the success stories should be replicated in much wider areas but with appropriate modifications which suits the new prevailing situations.

7. There is a government tendency to finance crop development programs proportionately to the foreign exchange it is generating to the country. However cassava is a very potential server of the small holder producer due to its low demand in the soil quality and its relative resistance to draught. The government, through its research and extension mechanism, should strongly promote its place so that it can yield enough to feed the local communities. It is even more important that it should be one of the foreign exchange earning crops from the western developed markets for their developed livestock industry. Most of the Tanzania's so called marginal land have the potential to produce billions of tons of very cheap cassava if appropriate actions are taken by the National governments in collaboration with donors.
8. In terms of trade, the world is generally becoming one. The national governments need to translate these into realistic programs which can be implemented and which will be for the interest of the small holder farmer survival. A lot of talks have been made. What is needed is the direct but well planned and well executed small holder development subsidies. The private sector needs both capital and educational support from the government so that it can have a positive impact to small holder farmer. This is more relevant to developing states, which were previously socialistic states like Tanzania, where it was very uncommon for private enterprises to operate in a free and fair competitive environment. The state monopolised all the production and the marketing sector to the extent that the people had a belief that, it is impossible for these activities to take place without the government intervention. The private sector was regarded as exploiters, capitalists, you name it. In summary an attitude was built in the people's mind that private sector involvement in agricultural marketing is evil. Now that the same countries policies have changed in favour of the private sectors full involvement in the agricultural marketing, the donor governments should give special support to this newly emerging private sector, in terms of availing the much needed capital and provision of the appropriate business training. As much as possible most marketing and processing services should be supplied under competitive market arrangements by co-operatives and private traders. Therefore, globalisation will benefit the poor nations when the whole world will unite and commit itself to equal distribution of available resources. Globalisation will never succeed when the gap between the rich and the poor nations is increasing.
9. The western developed markets should 'fully' open their agricultural markets to the African agricultural producer, without a lot of unnecessary restrictions and other red tapes, with close to zero tariffs on the agricultural produce from the

Africa. The western markets have a commitment of providing educational support to the small holder producer and the agricultural exporters from the developing nations of the accepted quality standards acceptable in their countries.

10. For drastic improvement of the African agriculture in the shortest time possible the following need immediate action:
    (i) Cross border trade should be legalised and promoted.
    (ii) Agricultural sector legislation need to be reviewed, harmonised, publicised and implemented by carefully planned strategy of really assisting the small holder producer.
    (iii) Streamline land laws and procedure to acquire it, to guarantee the developers but giving special priority to the small holders.
    (iv) Strengthen the agricultural mechanisation.
    (v) Promote/strengthen rural agro processing industries.
    (vi) Increase access of appropriate agricultural inputs in rural areas.

11. The agricultural sector will for a long time to come still continue to be the backbone of the economy of most of the sub Saharan African countries. As it appears the development of the African agriculture is very difficult. Special incentive schemes should be developed to the small, medium and the large-scale farmers to encourage more investment in the sector. Such incentives should include zero taxes on most of the local agricultural activities, and the creation of special agricultural credit facilities with minimal interest rates 'close to zero'.

SECTION III: ANNEXES

Annex No 1. **Brief account of the Tanzanian food security**.

Food Security in Tanzania, in the past and the planned policies/programmes for the future are summarised as below,

(a) By and large Food Security as a specific policy programme was initiated in 1984 when the National Food Strategy was inaugurated. Nevertheless, even in the earlier period since independence, availability of and access to, food by people in Tanzania has been the concern of Government policy and programmes.

(b) In this context agriculture was promoted in order to be self-sufficient in food, although emphasis has always been on cereals (maize, wheat, sorghum, beans rice and cassava). Livestock products were never included, Again availability for urban dwellers took priority over the needs of rural people, may be because the urban have more political power or because it is easier to determine the needs of the urbane.

(c) Self-sufficiency in food was never attained all the time but then Government ended up importing food to fill the gap, again mostly to meet the needs of towns.

(d) It can be said that Tanzania developed a capacity to know and deal with food shortages, including distribution of imported food/food aid. This has not been the case in many African countries (wars, lack of a politico-administrative system that penetrated into the rural areas).

(e) The National Food Strategy of 1984:main features:
    - Promotion of increased food production.
    - Export crops were promoted in order to earn foreign exchange needed for imports, including importation of food during shortages.
    - Pan-territorial prices for main food and cash crops, to encourage production of cereals from remote regions that has natural potential for specified crops. Later this was seen as a distortion of price mechanism.
    - Transport cost was subsidised through the parastatal organisation the National Milling Co-operation (NMC)

- The Government and donors subsidised inputs for crops (seeds, fertiliser agro-chemicals, etc.).

(f) Food security following economic reform programs (ERP).
- In principal the ERP did not address food security per se, but aimed at promoting:
  (i) Increased food + Export crops.
  (ii) Improve market infrastructure.
  (iii) Increase resources available to agriculture.

(g) As a strategy to implement ERP the following actions were taken:
- Increase producer incentives packages (agriculture inputs + consumer goods).
- Liberalise markets, including that of food crops, producer prices on subsidised food crops delivered.
- Establish National Strategic Food Reserve under Government, first the Treasury but later to Ministry of Agriculture

(h) Assessment of the National Food Security (NFS)
- Emphasised availability of certain foods, maize, rice, wheat and beans, neglected the role of livestock in food security.
- The intended transformation of agriculture failed due to frequent policy changes, shortage of inputs and control of markets.
- Only urban centres get attention so that food security in rural areas is weak.
- The whole programme was done at the centre, the Ministry of Agriculture, FAO and DANIDA.

ANNEX No. 2

Detailed experience from of one of successful projects.

The KALIDEP experience;

The KALIDEP was a bilateral development program financed by the Tanzanian and the Dutch governments. Its implementation started in 1976 as a F1 dairy heifer-breeding program, and grew into a complex dairy development program touching on most of the aspects of dairy industry. Which included 'Veterinary service, breeding, extension services, marketing, input supply, farmers institutional capacity building' KALIDEP's, main objective has been to increase the milk production by the small holder farmers for mainly family food and excess sell to the family relatives and other neighbours. When KALIDEP started the milk production from the improved dairy cattle was, zero. By December 2000 the annual milk production reached over 11.00 Million litres. The milk being produced by over 7300 small holder dairy farmers (of which women were 2850) keeping a total of over 16,000 dairy cattle.

Some reasons behind the achievement of KALIDEP.

1. Relatively long-term commitment of the project in developing the dairy industry in Kagera region. '24 years, from 1976 to 2000'.
2. Long time committed management and field staff. There have been generally no major staff transfers. This resulted in a very strong implementation project team, which gradually got the necessary operational experience, in a constantly changing working environment.
3. The project design aimed at benefiting the participating small holder farmers directly.
4. The project had a very flexible design right from the start. Though the project budget was fixed according to the approved plan operation, the activities and the implementation strategy was carefully modified to suit the existing field situation.
5. The KALIDEP project believed and relied on the several project stakeholders (Farmers, local and central government administrators, various private business communities, and the KALIDEP staff) to fully participate in the implementation of the project. It was not everything by the project, but rather the beneficiaries and other stake holders involvement in the projects, planning, management and implementation at various level. The highest policy projects body under the chairmanship of the highest-ranking civil servant of Kagera region, the KALIDEP steering committee was made up of members representing the main project stakeholders. These were, Five farmers' representatives one from each the five

administrative districts of Kagera region. Two representatives from the line Ministry of Agriculture responsible for KALIDEP. One representative from another central government ministry, the Treasury. Two members 'The general manager and the Kikulula Ranch manager from the National Ranching company 'NARCO' which was responsible for the management and availability of the dairy F1 heifers for the project from its Kikulula ranch. The regional KALIDEP technical and management staff, the KALIDEP team leader and manager and last but not least, the Kagera regional administration representatives (two members).

6. The financing of KALIDEP was carefully done to just avail enough funds for the planned activities, but at the same time gradually reducing the subsidy element of the project money used in the subsidisation of milk being produced by the individual small holder farmers. The level of subsidy was reduced from 0.86 Dfl per Litre of milk produced by the small holder dairy farmers in 1990 to only 0.095 Dfl per Litre of milk produced by the small holder dairy farmers in the year 2000. Moreover farmer contribution to the total KALIDEP annual operational budget has been increasing from very negligible levels at the start of the project to over 122.9 million Tanzania shillings (Dfl 351,000) in the year 2000 which was equal to 59.3 % of the total KALIDEP annual operational budget for that year. Table 1 below is a summary of the KALIDEP small holder dairy support subsidy by the Dutch government for the year 1989 to 2000.

Table No 1 The summary of the KALIDEP small holder dairy support subsidy by the Dutch government for the year 1989 to 2000.

NO	REFERENCE YEAR	TOTAL DUTCH FUND BUDGET ('000 DFL)	TOTAL MIK PRODUCED BY SMALL HOLDER DAIRY FARMERS ('000 LTS)	COST PER LITER OF MILK PRODUCED (IN DFL) BY THE DUTCH FINANCING (The subsidy)	COST OF CREATING ONE NEW DAIRY FARMER IN DFL
1	1989	1508	2254	0.66	12,400 (121)
2	1990	2203	2541	0.86	11,800 (186)
3	1991	2200	2923	0.75	9,600 (228)
4	1992	2203	3403	0.64	11,000 (200)
5	1993	2792	4059	0.69	10,500 (265)
6	1994	972	4371	0.22	2,400 (401)
7	1995	1300	4835	0.26	2,300 (563)
8	1996	2278	6077	0.37	5,000 (456)
9	1997	1627	7200	0.22	1,500 (1051)
10	1998	1722	8000	0.22	1,600 (1063)
11	1999	1236	10106	0.12	1,400 (875)
12	2000	1053	11100	0.095	1,100 (951)

NB: In brackets shows – number of new dairy farmers

7. The KALIDEP project design has been and is still environmentally friendly through its " Zero grazing" dairy cattle management system, which is financially and economically attractive.
8. The kind of dairy farming being advocated in Kagera (already tested and working, resulting in the current very big demand of dairy cattle) is that of *"Dairying being part of the overall farming system".* In this system dairy cattle integrate very well in the overall farming system and improve the whole farm productivity. An average production of 5 lt. Of milk per day (i.e 1,800 lt. Of milk per year) per farmer, out of the dairy unit is what is being targeted for in this system. In addition to milk, the cow in this system provides manure and urine to enrich the farmer's soils. These soils consequently are able to produce more cash and food crops. The farmer's family is assured of food production for home consumption and even surpluses for sale. The farmer will also be having more cash crops for sale. The family will have improved nutrition as a result of drinking milk and a further cash income from modest milk and animals sales. Dairy profitability in this sense will come from the overall farm productivity rather than from milk alone. In this system the milk marketing problem, which is normally associated with specialised dairying should not be an issue. In specialised dairy farms the main output is milk. The integrated dairying

like the one in Kagera has a different objective. The June 1997 KALIDEP social economic survey (Rugambwa et al., 1997) revealed that the main reason why farmers in Kagera go into dairying (in order to importance) are:

1. Milk for home consumption.
2. Manure for the farm.
3. Obtaining some cash out of milk or animal sales.

9. The small holder producer is very eager for change. With good plans, it is possible to significantly improve the livelihood of the small holder producer through improved agriculture and therefore improving his/her family food security position and the general family economy. The history of Tanzanian agriculture demonstrates the potential success of crop based intensive smallholder development programs, which have raised farm incomes by introducing a new crop resulting in fast growth of farm incomes, which could be sustained after the completion of the program. More recently, introduction of dairy – with equally clear and direct benefits – was picked up quickly by farmers. Few present projects seem to have a crop focus or incorporate innovations that could be expected to achieve a clear and direct increase in farm incomes or farmers welfare.
10. Donor support is important in providing the seed money for the continuation of the heifer in trust credit scheme, which is still very much needed by the ordinary Kagera peasant farmer to start dairying. In the beginning KALIDEP started its dairy development program by starting with the relatively richer farmers who could afford the investment. Because by then there were no special credit schemes. And secondly to demonstrate that dairying is can successfully be carried out in Kagera. As the years went by the picture has dramatically changed into the direction that most of the benefiting new dairy farmers are the ordinary poor small holder peasant farmers living in the villages whose livelihood to a great extent depend on agriculture. These farmers though very much willing to become dairy farmers, will never be able to start dairying without the HIT credit scheme.
11. Kagera should continue stimulating zero grazing dairying, which is both environmentally friendly and fitting well with most of the Kagera farming system. The type of cattle, similar to the one being currently distributed to farmers should be hardy enough to fit the environmental conditions, and but also be able to produce an average of 5L of milk per day throughout its lactation period of 300 days. This type of animal will be having exotic dairy genes of between 50-70%, and not more. From KALIDEPs experience, an ordinary peasant farmer living in the village can manage this animal, and it doesn't need any elaborate management. Home grown fodder, natural fodder together with farm by-products are the basic inputs, which are necessary for such an animal. The only external inputs for this dairy unit, are veterinary medicines and minerals.
12. Failure of the donor to recognize the KALIDEP success and building on it for the more smallholder development was demonstrated by the KALIDEP's closure in march 2001. Instead of building on achieved successes and scaling up the gained experiences.

ANNEX No. 3

THE SMALL HOLDER FARM AND ITS ENVIRONMENT

The African continent is still relatively empty. There is great potential for the agricultural expansion even before thinking of intensification. However in some pockets of the continent, e.g. in Rwanda, some densely populated areas of central Kenya and North Eastern parts of Tanzania, exist. In these densely populated areas of the continent, agricultural intensification must be a way of life.

As an example the below table is summarising four different rural areas positions, to give better light onto the working environment of the small holder producer.

Comparison between 4 rural areas where the small holder operate

	Kasulu District in Tanzania	Songea District in	Shinyanga Region in	Republic of Rwanda

		Tanzania	Tanzania	
Area in sq km	9,324	33,925	50,000	26,338
Population	445,360	355,471	2,300,000	7,500,000
Land under cultivation (mostly by small holders) in hectares.	149,000	296,230	912,000	1,300,000
Potential cultivatable land. Not under cultivation. (hectares)	276,000	2,996,000	1,388,000	640,000
Cultivated HA available per capita	0.33	0.83	0.40	0.17
Total area for cultivation per capita	0.95	9.26	1.00	0.25
Cattle	40,000	11,000	1,884,000	750,000
Land used for grazing (hectares)	181,000	?	700,000	362,000
Number of cattle per capita	0.08	0.03	0.60	0.10
Food importation in tons	?		3,000	182,000
Food surplus in tons	?	115,000	9,000	
Annual rainfall	1100 to 1700 mm	1150 mm	600 to 900 mm	1100 to 1500 mm

Some important notes and observations related to the above table.

- Despite the big differences between the above four rural areas it has been established that the total amount of nutrition available per capita does not differ very much as a whole between area and area, with the possible exception of Rwanda, where you could expect some 'hunger'. The presence of hunger very much depends on the year and the social status of the household. In years with good rains most of the households have a reasonable amount of food available even the lower classes. In years with poor rains the situation is quite different. In all four areas the main farm implement is the hoe and farmers knowledge. In the more populated areas root crops like sweet potatoes and cassava are more important than maize and sorghum. In such situation intensification will occur with higher yields per ha but with equal or even lower productivity per man-day.
- The above table is showing the extreme differences in resources in area for cultivation and cattle per capita for these four different rural areas.
- In each location the major economic activity is agricultural employing over 90 % of all households of the area.
- In three of the farming rural areas livestock is only playing a minor role. Despite the fact that experiences gained by several projects which shows that intensive livestock keeping significantly increases the total small holder food and cash crop production due to the well known manure effect of the improved nutrient cycle.
- There are several reasons for livestock to play a more important contribution to the over all farm profitability and where the presence of livestock has a direct positive contribution. The most important livestock contributory reasons are; (a) In arid to semi-arid areas crop failures are very common. Livestock will act as a buffer. (b) Secondly in areas where the use of oxen power is used for cultivation livestock presence is very important in the total farm productivity. In most farming systems where livestock has more important role in the total farm productivity there is a tendency of larger differences in social status among the peasant farmers. Although in totality these areas might have enough food, hunger may still be a big problem for a fairly large group of inhabitants of the area. As an example, during the field visit in such a typical livestock district e.g. Kondoa district in Tanzania. It was observed that on one same day in the same village there were two business people with a lorry buying food crop reserves from peasant farmers. While at the same time in the same village government officials were listing families who had not enough food to survive the next harvest.
- In farming systems where the hoe and the farmer's knowledge are the main tools for production the social differences among the peasant farming communities is normally

much less, however in such a system the individual household food security is also on much critical level.

- Kasulu district is exporting some maize and beans. However the amounts are not very high and not very reliable.
- Songea district nearly all the uncultivated areas are covered by miombo forest. These forests do not belong to gazetted areas and game parks, as it is the case in Kasulu district and are therefore available for future cultivation.
- For Rwanda it is expected that population will be over 15 million in the year 2015. In dry years importation of food is required. On the other hand according to the weekly East African of February 18-24 2002, Rwanda exported food to Uganda and Kenya during the previous year
- Farmer motivation is more income per man-day than kilograms of produce per hectare. e.g. Shinyanga income per man-day for maize was 900 Tsh while for paddy it was 1600 Tsh for the year 98/99

ANNEX 4; WHAT THE FARMERS GET IN THEIR COFFEE FARMING BUSINESS

A. KAGERA REGION FARMERS PERCENTAGE SHARE OF AUCTION PRICE

Year	Average auction price (Tsh/kg)	Buying price from farmers (Tsh/kg)	Ratio in % of what the farmer gets of the total auction price.
2000/2001	478	200	41.8
2001/2002	309	80	25.9

The above table indicates that coffee farmers in Kagera Tanzania have been receiving less than 50% of the world market price and still the unions in question have been making huge losses.

However in case the coffee exporting country improves its overall marketing strategy the coffee farmers stands a chance of getting more of the world market price share. For example the neighbouring Uganda coffee farmers are getting between 70-80% of auction prices. They are able to get these higher prices because the demand for their coffee is high (better quality) and they are daily aware of the prevailing world market price. Farmers sell only when they think they are getting good bargain. The payment terms are cash whether they are selling to unions or private. In summary the main reasons contributing to the difference in price between Kagera and the Uganda coffee farmers are;

- Difference in world market price between Kagera and the Uganda coffee;
- FOB costs;
- Marketing system;
- Variable costs;
- Interest rate;
- Taxation;
- Electricity cost;
- Cost of parking material (gunny bags).

The following table summarises the reasons why the Ugandan coffee farmers are getting a better price than their Tanzanian Kagera farmers' counterparts.

Reasons contributing to the difference in price between the Uganda and the Kagera (in Tanzania) coffee

Reason for the difference	**Actual Uganda coffee price**	**Actual Kagera (Tanzania) coffee price**	**Additional explanation**
Auction price on	Tshs 255/kg	Tshs 207/kg	Uganda coffee has a premium of 1.14

the 4th.10.2001.			cents/kg above the London terminal price
Free On Board (F.O.B) cost	Tshs 129//kg	Tshs 176/kg (X-Kemondo Bukoba)	Ugandan coffee exporters pay less to Tanzania Railways co-operation (TRC), for their coffee transport to Dar-es salaam, than the amount the Tanzania exporters pay from Kemondo to Dar es Salaam, i.e. 990,080Tsh/40tons for the Ugandan exporter against 1,076,640Tsh/40 tons for the Tanzanian exporter.
Marketing system (forward selling)			Ugandan exporters can offer higher prices to the coffee farmers while the Kagera (Tanzania) exporters have to spot sell at the auction based on prevailing London Terminal prices of the day.
Variable costs	Variable costs are adjustable	Variable costs are not adjustable	Ugandan coffee buyers tend to maintain the coffee buying prices paid to the farmers even when the world market price falls, by adjusting the variable costs and by extrapolating the next seasons world price increases. This is because of the stiff competition between the buyers, they don't want to loose their customers. In Tanzania it is the exact opposite where the prices given to the farmers can raise and fall depending on the world market
Interest rates (From the landing banks)	6-8% money readily available.	19-21% + a variety of other collateral costs	Funds for Ugandan coffee buyers are readily available and at a low interest rate, while for the Kagera coffee buyers, the unions have to borrow funds at very high interest rates.
Taxation	Coffee sales charges are only for covering the cost Uganda Coffee Development Authority (UCDA)	20% VAT on almost every coffee related services i.e transport, processing, gunny bags, TCB licence fee, TCB levy, ACE charges	This is the greatest contributor to why the Kagera farmer is getting around 25% of the market share and the Ugandans getting between 70-80%.
Electricity charges	Tsh 34,54/kg of clean coffee	Tsh 40Tsh/kg of clean coffee	Mainly because of the higher electricity bill and VAT in Tanzania.
Cost of packaging material	Jute bags @ Tshs 1,200	Sisal bags @ Tshs 1,700	Jute bags are used in Uganda. In Tanzania only sisal bags are used. This contributes to low coffee prices given to Kagera farmers.