



New Possibilities regarding the Development of Sustainable Agriculture in Tanzania

<http://nortreks.net/agriculture-in-tanzania>

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Summary

This paper aims to help make Tanzania use its enormous land resources towards becoming a net exporter of food to the benefit of both its own agricultural population and to the rest of the world. The paper outlines possible means to make this come true:=-

- 1) A general land reform to enable the creation of a sustainable agricultural sector by increasing the size of the average farm from less than 10 ha (25 acres) to at least ten to 20 ha (25 to 50 acres) by awarding smallholder farmers ownership of available state-owned land; [page 6]*
- 2) The establishment of a comprehensive network of farming colleges where farmers/students (of all ages) will receive basic training during 3-6 months of the year; [page 3]*
- 3) Improve the availability and use of farming equipment, such as so-called 'walking' or mini tractors and consider the use of horses for pulling farm equipment such as plows; [page 3]*
- 4) The establishment of large nation-wide financing institutions for farmers; [page 4]*
- 5) Review the current approach to 'zero-grazing' to ensure it is implemented in accordance with "Standards for organic animal husbandry"; this means i.a. that that landless zero grazing is not allowed. [page 7-8]*
- 6) Starting an ethanol production in Tanzania, like Brazil did in 1975, to ensure a more environmentally friendly use of farm equipment like so-called 'walking' or mini tractors, along with the possible use of horses to pull farm equipment like plows; [page 4]*
- 7) National development aid programmes from OECD countries should focus not only on creating large scale farm to the benefit mainly of foreign investors, but also on the development of a competitive sector of smaller scale farms; in this context, it is also important to make sure that aid from foreign NGOs is not restraining small-holder farmers from becoming competitive and efficient on their own, for example by activating former ways of dealing with hardships such as droughts and other reasons for crop failures; [page 7-9]*

NB:=- the United Republic of Tanzania and the European Union have started preparing their co-operation strategy for the 2021 – 2027 funding period, c.f. page 7.

To help the two parties design the most relevant strategy, all Civil Society and Private Sector Organisations are now invited to share their views through this link:=-

<https://ec.europa.eu/eusurvey/runner/15455673-db8a-2dbd-4835-a484a38b99e5>

1. Background:

Agriculture is a most significant economic sector in Tanzania. About 80% of the population is involved in the agricultural sector and the country possesses enormous land resources.

Yet ***Tanzania remains a net importer of food***. The main reason for this is that more than 90% of farms are less than 10 ha (25 acres) in size and produce mainly for the farmers and their families. Their surplus production is almost exclusively sold in nearby villages or towns in open-air markets. In other words these small-holder farmers are basically 'subsistence farmers'.

2. Items for discussion as basis for the development of sustainable agriculture in Tanzania:

a) Whether or not a general land reform is needed in order to create a sustainable agricultural sector able to utilize the enormous agricultural land resources that exist in Tanzania.

In this context the so-called 'breadbasket' corridor from Dar es Salaam via Morogoro to Iringa remains mainly as state owned land which is not cultivated, or which often serves as huge sisal farms (which may or may not be state-owned). Since the sisal market has shrunk significantly during the last four or five decades, most of these huge land resources could probably be transformed into productive agricultural land, for example by the current small-holder farmers. *However, most village land remains not formally registered by user/owner; in other words, very few small-holder farmers have formal titles or deeds that give them the formal ownership rights to the land they farm. In addition, the cost for a farmer to obtain title to his/her land appears to be prohibitive – often costing as much as the value of the property.*

In fact, Government owned land (the larger part of Tanzania's farmland) is generally not sold to private farmers, but is subject to land leases up to 99 years. However, the Government has apparently begun to change the length of these land leases to shorter periods, down to 10 years.

b) Whether or not a comprehensive network of farming colleges ought to be established where farmers/students (of all ages) will receive basic training (maybe during 3-6 months per year),

This would be a major project to undertake, but could we imagine an alternative? Maybe the use of well-educated consultants or counselors could be a beginning. Such persons with an undergraduate college education (e.g. from SUA) who speak the local language of a region, would appear a possibility to start implementing a new initiative for farmers in Tanzania.

In addition traineeships could be offered to agricultural students to spend up to a year abroad at agricultural colleges or training farms, for example in Europe or the United States.

c) Whether or not the use and availability of farming equipment ought to be improved

The establishment of co-operation regarding the ownership of tractors and other equipment should be encouraged.

In this context new types of farm equipment for smallholders are coming onto the market, such as hand operated milling machines powered by small diesel engines and so-called 'walking' or mini tractors:=-



From a 'sustainable agriculture' policy point of view, if ethanol were to be used instead of petrol, then this might be OK, especially if this means getting the husband more involved in the farm work on a daily basis, instead of mainly the wife and the children, c.f. page 13.

With this in mind, why not begin production of ethanol in Tanzania, like Brazil did in 1975:=-

<https://www.rapidtransition.org/stories/the-rise-of-brazils-sugarcane-cars/>

Maybe this is already in process, c.f. this piece of information from the Tanzanian Investment Centre from 2014:=-

<https://www.tanzaniainvest.com/industry/bagamoyo-ecoenergy-project-tanzania-is-looking-for-new-investors>

In addition, the use of horses could also be considered as an alternative to both 'walking' and normal size tractors as far as farms, say **below 20 ha (50 acres)**, are concerned, c.f. section 3.

d) The establishment of large nation-wide financing institutions for farmers

These financing specifically aimed at financing farming developments, would also be an essential element in an agricultural reform programme in Tanzania for all farmers, in particular for small-holders (farms below 10 ha/25 acres).

In this context the much publicised micro-loan facilities for small businesses appear useless. Only large finance institutions (banks) will be able to absorb unavoidable losses from farmers who cannot meet their obligations to serve their loans.

The East African Development Bank (EADB) with branch office in Dar es Salaam, should start focusing on the agricultural sector immediately.

3. The use of horses in agriculture

In Europe the introduction of horses in agriculture took place during the 19th century. Prior to this the use of oxen had been common, and horses were mainly used in the cavalry or by nobility.

In Denmark horses were not perfected for use in agriculture until the late 19th century. The import of a shire stallion (a very heavy draft horse) from Yorkshire or Suffolk in England was a significant progress and resulted in the Jutland horse which is still used by 'organic' farmers and by breweries in Denmark at special festive occasions to pull the breweries' wagons with tons of beer.



Horses were phased out for use in agriculture in Denmark when 'mechanisation' started in the 1960s. In 1964 there were about 500.000 horses and about 200.000 farms in Denmark with an average size of 20 ha (50 acres) and an average number of 2-3 horses per farm.

Today there are about 33.000 farms in Denmark with an average size of 70 ha (175 acres) all using tractors and other forms of mechanical equipment.

At the same time agricultural employment has fallen to about 45.000 (less than 2% of the population), down from about one million in the 1960s (20% of the population in the 1960s). Danish farms still remain mainly family owned.

By contrast, the number of horses in Denmark has increased to about 1 million; however, now mainly used for leisure riding, but the prospects for reintroducing horses in agriculture has recently become relevant in the context of the 'greening' of the European Union's Common Agricultural Policy, where there is an ongoing discussion in the context of reforming the Common Agricultural Policy (CAP). In fact, according to information from the European Horse Network, the use of horses meets the objectives of a 'greening' CAP: =

<https://www.europeanhorsenetwork.eu/app/download/28701172/Horses+in+Future+Agriculture+Policy+beyond+2020+-+Jun+18.pdf> .

In the United States the Amish communities located mainly in Pennsylvania, Ohio and Indiana continue to use horses to cultivate their farms. The Amish consider it a religious sin to introduce tractors and other modern farm equipment in their community. The average size of an Amish farm is 40 acres or 16 hectares. Many types of farm equipment to be pulled by horses is still produced in the United States: = <https://www.youtube.com/watch?v=rILpJeA3BZU>;

Horses are also being reintroduced in farming in the USA in other places: =

<https://www.nytimes.com/2013/05/16/garden/farm-equipment-that-runs-on-oats.html>

Going back to the situation in Tanzania about 50 years ago, it was no doubt the same ideas which caused President Nyerere and his Prime Minister Edward Sokoine to import horses from Australia to be used to help implement their plans for developing agriculture in Tanzania; and it was with this in mind that a description of 'Farm Life 60-70 years ago in Denmark' was drafted=<http://nortreks.net/farmlife-andersholm> .

4. The current situation in Europe regarding agricultural policy and competitiveness of the sector.

Since joining the European Union in 1973 Denmark exports the major part of its agricultural production of mainly dairy and meat products as follows: 1/3 is exported outside the EU, 1/3 to other EU countries and the last 1/3 is consumed by its population of some 5.2 million.

The situation in other European countries regarding the agricultural sector varies. Heavily industrialised countries like the UK remain net food importers; other countries like France, Italy and Poland are also important players on the international markets for agricultural products.

In Eastern European countries, members of the European Union since the first decade of the 21st century, horses remain a major factor in agriculture and farms are also small in relation to farms in Western Europe.

5. Current approaches to agricultural developments in Tanzania

Apparently there is currently a trend to lease off large portions of fertile **state owned land** in Tanzania, mainly to foreigners who want to benefit from these land resources by establishing large 'industrial farms' which may well increase agricultural production in Tanzania. But will this approach improve the economic and social situation for the about 75% of Tanzania's population currently involved in subsistence farming?

The answer appears evident: 'NO, it will not'.

Let us conclude

- 1) that the development of agriculture to ensure both a competitive agricultural sector and a motivated and healthy population working in the agricultural sector must be done or controlled by Tanzanians, not through foreign direct investments which primarily aim to benefit the foreign investors.***

However, we need to check whether or not this policy would be in accordance with Tanzania's commitments in the World Trade Organisation; if it is not, then the WTO would have to be consulted on the legally correct way to proceed.

The proposed policy should not be considered a trade barrier or barrier against direct foreign investments in general, as per Tanzania's commitments which include no restrictions against foreign majority ownership in all economic sectors, except mining of e.g. precious stones and metals.

In fact, according to *WTO Trade Policy Review: East African Community (EAC), Report on Tanzania* page 309 https://www.wto.org/english/tratop_e/tpr_e/s384-04_e.pdf via https://www.wto.org/english/tratop_e/tpr_e/tp484_e.htm

“the Tanzanian Land Act was amended in 2017 by the Written Laws (Miscellaneous Amendments) (No. 5) Bill, 2017, to change how land can be mortgaged, in particular with regard to a mortgage being held by a local or foreign bank/financial institution; it protects customary rights and is now seen as one of the most important keys to ensuring security of tenure, particularly for the poor. It also assists landowners in mortgaging land acquired under a Certificate of Customary Right of Occupancy (CCRO). According to the Land Act, only Tanzanians may own land but foreigners may apply for derivative rights to use land for periods of time, generally between 33 and 99 years”.

- 2) The move from very small to larger size farms (at least ten to 20 ha/25 to 50 acres) in Tanzania will also help ensure that the use of expensive artificial fertilizers will be minimal. This is because it will be possible to change the growing of crops on the same piece of land during too many years, to changing crops every year from one field to next (also called ‘crop rotation’).

This way of farming makes it possible, to a large extent, to avoid the use of artificial fertilizers to enrich otherwise overexploited farm fields, and also to avoid an extensive use of pesticides to kill unwanted weeds.

The redistribution of available state owned land in Tanzania to enlarge the many small (subsistence) farms so that they become both profitable and able to produce larger quantities of so-called ‘cash crops’, should therefore be undertaken as soon as possible. In other words, an agricultural reform policy should be implemented.

In fact, such a policy reform was already indicated in the European Union’s International Partnership Programme with Tanzania: =

https://ec.europa.eu/international-partnerships/where-we-work/tanzania_en

where *sustainable agriculture* –“aiming to transform agriculture into a key driver for inclusive and smart climate growth, poverty eradication, sustainable development, job creation and industrialisation” is one of three priority areas where the 11th European Development Fund (EDF) National Indicative Programme (NIP) allocated €626 million for the 2014-2020 funding period, of which €140 million were allocated to the development of ‘sustainable agriculture’.

Such a policy would indeed mean a significant push, both regarding domestic food production and also regarding the creation of a competitive agricultural sector in Tanzania, able to compete both with neighbouring countries in Africa (mainly the RSA and Kenya) and with countries outside Africa, such as the United States, Canada, Australia and New Zealand, countries in South America and in the European Union.

In this context the United Republic of Tanzania and the European Union have started preparing their co-operation strategy for the 2021 – 2027 funding period.

To help the two parties design the most relevant strategy, all Civil Society and Private Sector Organisations are now invited to share their views through this link: =

<https://ec.europa.eu/eusurvey/runner/15455673-db8a-2dbd-4835-a484a38b99e5>

Three broad priority areas have been defined, based on both the strategic priorities of the Government of Tanzania and the European Union.

These areas are: 1) Green Deals, 2) Human Capital and Employment, 3) Governance. Cross-cutting issues such as gender, climate change (and the implementation of the National Determined Contributions under the Paris Agreement) or digitalization will be captured in the above-mentioned priority areas. Each such priority area shall be covered through a maximum of three focal sectors of intervention.

- 3) In addition, the so-called **‘zero grazing’ policy**, which is being practiced in Tanzania and other East African countries, inter alia by having one cow per farm used for milk production for the family only, and not letting the cow out for grazing available pastures, should be reviewed and properly implemented where needed in accordance with “Standards for organic animal husbandry”:=

<https://infonet-biovision.org/Publications/TOF-Issue-No-17-SeptOct-2006>

“Farmers should ensure that the environment and the facilities are adequate for the size and number of the animals, so as to provide for the behavioural needs of the animals. Some farmers keep their animals in crowded sheds without adequate space for free movement. We should not forget one thing: If you stress the animals, their milk production drops.

Organic standards demand that:

- *There should be sufficient free movement and opportunity to express normal patterns of animal behaviour. All animals should have access to pasture, an open-air exercise area or run, whenever the physiological condition of the animal, the weather and the state of the ground permit. This means that landless zero grazing is not allowed.*
- *The farmer should ensure sufficient fresh air, water, feed and natural daylight to meet the needs of the animals; where animals require bedding, adequate natural materials must be provided.*
- *Access to resting areas, shelter and protection from sunlight, high or low temperatures, rain, mud and wind are ways to reduce animal stress.*
- *The animals’ social structures must be maintained by ensuring that herd animals are not kept in isolation from other animals of the same species”.*

In fact, proper feeding and housing of dairy cows is the basis for increasing their productivity.

The ‘zero grazing’ approach to dairy farming was apparently recommended by Dutch agricultural ‘experts’ about a decade or two ago. As stated in the ‘Standards for Organic Animal Husbandry’ it is against the natural instincts of any herd animal like cows and horses to be left alone in their stable. According to European Union directives, it is for example not allowed to keep one horse alone in a private stable.

There must be at least two horses together in a stable, c.f., “*The animals’ social structures must be maintained by ensuring that herd animals are not kept in isolation from other animals of the same species*”.

4) Constraints that may hinder a new agricultural policy approach in Tanzania

During a meeting in Dar es Salaam some time ago, there was a discussion about how the overall attitude of the Tanzanian farm population towards self-sufficiency in times of hardship such as droughts had changed since colonisation in the mid-1800s.

Before colonization, Tanzanian farmers were able to cope with many problems on their own, and they were proud of their work as providers of food for both their families and others.

They had developed special ways of storing food that could be used in case of crop failure, ways which today are mostly forgotten due to the influence of foreigners during colonisation and the current availability of aid from NGOs and from foreign aid programmes in case of hardship.

These foreign ‘elements’ may well be a significant constraint that prevents the desirable development of the agricultural sector in Tanzania to become competitive and efficient on its own, like the agricultural sectors in for example Europe or the United States.

A new agricultural policy approach in Tanzania could elaborate on this issue and encourage new approaches to make Tanzanian farmers activate their former ways of coping with crop failures and other problems.

This would facilitate the development of a new and proud farmer generation.

In fact, such an approach would clearly contribute and encourage the development of a sustainable and more efficient agricultural sector in Tanzania, based on resources available in the country itself.

Notes:

1) Agricultural land reforms in Denmark from the end of the 18th century to the beginning of the 20th century are described in many places, including Wikipedia:=
<https://en.wikipedia.org/wiki/Stavnsb%C3%A5nd>

2) The use of horses in agriculture was not very common until the 19th century in many countries in Europe. This is also documented in Wikipedia:=
https://en.wikipedia.org/wiki/Jutland_horse

3) The World Trade Organisation ensures a rule based trade policy environment for its 153 member states (these are all United Nations members and there are ongoing negotiations about other countries joining the WTO such as South Sudan and Ethiopia; Tanzania and Kenya have been WTO members since 1995).



Plowing with a horse at SUA
It was the first time this horse tried to pull farm equipment

Annex 1: Government policies that may have influenced agricultural developments in Tanzania

The following 'fact sheets' outline the Tanzanian government's policy actions in the agricultural sector during more than ten years.

In addition several foreign aid programmes presumably play a role, such as

- 1) The 'EPINAV' programme:=

http://www.umb.no/statisk/noragric/epinav/epinav_programme_document.pdf

EPINAV was a joint research programme between SUA and Norwegian agricultural research institutions which apparently was implemented during 2010-2014.

During this period a total budget in the order of NOK 72,273,043 (about 9 mio € or 12 mio US\$), or an average amount of 18 mio NOK/2,3 mio €/3 mio US\$ per year.

It appears that this programme was mostly financing academic staff costs in both Tanzania (SUA) and Norway (Universities in the field of agriculture). The four themes of the programme stretch from 'innovate' and applied research via climate change to policy research and good governance to innovative communication methods

- 2) DANIDA:= Denmark's Development Activities in Tanzania

<https://um.dk/en/danida-en/strategies%20and%20priorities/country-policies/tanzania/annex-2---denmarks-development-activities-in-tanzania/>

Through the years 1999 to 2008, Denmark contributed approximately DKK 454 million (60 million euro) to Tanzania's Agriculture Sector Programme Support. The overall aim was a sustained increased rate of growth in the income of the rural population.

To achieve this the second phase of assistance (ASPS II) was given as support for policy reforms, promotion of private sector growth within the agricultural sector (PASS), farmers' access to quality seeds, and increased agricultural development at local level. As time passed, however, the various components were increasingly implemented as fragmented, individual projects, lacking a coherent and strategic approach. The intended developing synergies between components were lost. Thus, the programme under-achieved in terms of having an impact on national policy development, and the Danish support was phased out in 2008. Some of the more successful elements, such as the PASS support, after a restructuring, were included in the Business Sector Programme.

- 3) US-AID:= United States Agency for International Development
https://www.usaid.gov/sites/default/files/documents/1860/Agriculture_Fact_Sheet_November_2019_FINAL.pdf

AGRICULTURE OVERVIEW Funding level:= USD 5 million in 2019

IMPACT

- Improvements in agriculture: Over 190,000 hectares of land are now under improved technologies/agriculture practices.
- Productivity gains: Productivity of rice per acre for participating farmers has nearly doubled.
- Sector-wide gains: At least 450,000 people have benefited from Feed the Future value chain interventions.

- 4) **European Investment in Tanzania:** How European investment contributes to industrialisation and development in Tanzania; a 180 page report published in 2016:=
https://eeas.europa.eu/delegations/kenya/88944/european-investment-tanzania-how-european-investment-contributes-industrialisation-and_en

The chapter on agriculture (page 31 etc.) includes this description of the current challenges:

“As in many developing countries, productivity among Tanzania’s rural small-holder farmers is held back by a range of structural limitations including limited access to finance; inadequate storage infrastructure; high transport and marketing costs; low technology adoption; a lack of affordable inputs such as improved seed and quality fertiliser; weak government-provided extension services; an absence of accurate market information; and a failure to commercialise at scale.

The Government of Tanzania (GoT), together with development partners and commercial agribusiness investors, is working to address these challenges by creating stronger links between commercial and small-holder farming, and by developing more accessible routes to market for agribusinesses. The GoT’s newly established Agricultural Development Bank, whose mission is to increase farmers’ access to credit, embodies this approach. A further example is the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) Programme (SP) which aims to triple the agricultural output of Tanzania’s main food surplus regions by catalysing USD 2.1 billion of private investment, and by bringing an additional 350,000 hectares into profitable production”.

Annex 2: Fact sheets

1) Socio-economic facts about Tanzania (source: <http://www.tanzania.go.tz/>)

Tanzania has a surface area of 943.000 sq.km. or 94.3 million ha. of which 220.000 sq.km or 22 million ha. (23%) is allocated to reserves (largest share of land resources allocated by any country in Sub –Saharan Africa), which includes National Parks (4.2 million ha.), Game Reserves (7.7 million ha.), and Forest Reserves (10.1 million ha.).

The gross area cultivated/planted annually is about 5.1 million ha., which is only about 5 per cent of the surface area of Tanzania. The other arable land, but not cultivated, is 10 million ha., much of it is used as pasture.

Within the reserves there is an additional 4 million ha. suitable for cultivation.

COMMENT: i.e. a total of 191.000 sq.km. or 19.1 million hectares of arable land available for agriculture of which only 5.1 million ha. are being cultivated. If we estimate that out of the 80% of the population involved in agriculture or 32 million people, half of these (16 million) are adults and form the available workforce in this sector.

If we furthermore assume that only 10 million persons are really qualified as farmers or farm workers, and that an average size farm in order to be productive could employ 10 workers, then the arable land suitable for cultivation of 19.1 million hectares divided by the resulting 1 million farms would give us an average farm size of 19.1 hectares.

There could clearly be a large deviation from this average size farm, from say less than 10 hectares to more than 40 hectares, depending on types of crops and animals being grown or kept on the different farms. But overall it would appear that such a farm structure would indeed be both desirable and hopefully also feasible if the necessary policy instruments would be agreed and implemented, cf below.

The Land Act 1999 and Village Land Act 1999

The Land Act and the Village Land Act together provide the basic law in relation to the management and administration of land, settlement of disputes and related matters. Implementation of the Land laws will give rise to the need to properly inform all stakeholders about their rights and obligations, so that they can effectively participate in their implementation.

ROLE OF PUBLIC/PRIVATE SECTOR

All Ministries, public and private institutions whose functions are associated with land development should work together with the Minister responsible for lands to ensure efficient implementation of the national land policy.

Local Authorities are required to work together with the Minister responsible for lands to ensure proper land administration in their respective areas of jurisdiction

2) Socio-economic facts about agriculture in Tanzania (source: <http://www.tanzania.go.tz/>)

Agriculture is the foundation of the Tanzanian economy. It accounts for about half of the national income, three quarters of merchandise exports and is source of food and provides employment opportunities to about 80 percent of Tanzanians. It has linkages with the non-farm sector such as agro-processing, consumption and export; provides raw materials to industries and a market for manufactured goods.

Agriculture in Tanzania is dominated by smallholder farmers (peasants) cultivating an average farm sizes of between 0.9 hectares and 3.0 hectares each. About 70 percent of Tanzania's crop area is cultivated by hand hoe, 20 percent by ox plough and 10 percent by tractor. It is rain-fed agriculture. Food crop production dominates the agriculture economy 5.1 million ha. Are cultivated annually, of which 85 percent is under food crops. Women constitute the main part of agricultural labour force.

The major constraint facing the agriculture sector is the failing labour and land productivity due to application of poor technology, and dependence on unreliable and irregular weather conditions. Both crops and livestock are adversely affected by periodical droughts. Irrigation holds the key to stabilizing agricultural production in Tanzania to improve food security, increase farmers' productivity and incomes, and also to produce higher valued crops such as vegetables and even flowers.

Urban Agriculture:

Urban agriculture has flourished as a household – level initiative to cope with economic hardships encountered as a result of raising cost of living.

Urban agriculture which consists of raising and growing of vegetables and other food crops, is found in Tanzanian towns and cities where the market for agricultural products is present. Producers of vegetables, milk, broilers' meat (poultry) and eggs sell to private households and to schools, hotels, hospitals, bars, cafeterias and restaurants.

Agricultural Performance:

Agricultural GDP has grown at 3.3 percent per year since 1985, the main food crops at 3.5 percent and export crops at 5.4 percent per year.

Considering that the overall GDP growth target for halving abject poverty by 2010 was in the range of 6-7 percent, this performance falls short of the needed growth.

The macro economic reforms have and continue to have a significant impact on the Agriculture sector. The economic reforms have led to the opening up of the sector to private investment in production and processing, input importation and distribution and agricultural marketing. Most of production and processing and marketing functions have been assigned to the private sector.

The Government has retained regulatory and public support functions or facilitation role. Farmers are free to sell their crops to cooperatives or private traders. Due to competition, normal producer prices for food & export crops have increased as such farmers can now sell their produce much faster.

Farmers are no longer confined to a single source for their essential inputs for crops and livestock.

The Government recognizes the pivotal role of the agricultural sector both in terms of economic growth and poverty reduction. Also the strong influence of factors outside the sector such as infrastructure, rural financial services, land ownership and good governance is recognised.

Priority actions include:

- The pursuit of macroeconomic policies that will motivate investment in agriculture by small holders and large – scale commercial farmers.
- Creation of an enabling environment and provide proactive support to private operators, farmers organizations, NGOs and CBOs supplying inputs and credit to small farmers and ensuring a strong regulatory mechanism.
- Concentration of budgetary allocations in agriculture research and extension.
- Provision of special support to investments in agricultural processing particularly in fruits and vegetables and accord top priority to implementation of a new land Act.

3) Farm-life in Tanzania’s small-holder farm sector, some pertinent examples

It was during the 1960s that the so-called developed or industrialised countries in Europe and America started their 'development aid' organisations like DANIDA in Denmark and US-AID in the US, aiming to bring other countries, mainly in Africa, at economic par with the OECD countries, c.f. <http://www.oecd.org/africa/> .

So what has in fact been accomplished in this respect during the last 60 years in Tanzania and other African countries? The following photos from the daily life in rural Tanzania and other developing countries may hopefully help to better understand what the situation is like for this part of the population:=-



This appears to be a relevant picture of the daily working situation for many women in rural Tanzania; they start the day washing clothes in the local river; when this task is accomplished, they typically go on working in the fields of their family small-holder farm, often assisted by their children.

If there is a dairy cow or two on the farm, hand-milking the cows (and horses in Mongolia) is apparently also female work in Africa and Asia (*in fact, as it was in our village back home in Denmark until about 70 years ago, when automatic milking machines replaced women.*)



But where are their husbands and other adult males?

The answer I got from local friends:= “they are sitting in the shade smoking or they have gone to the local village bar to meet their neighbours for their daily talk about their mutual problems etc.” Maybe tending a typical 5 acre/2 hectare ‘farm’ only requires the involvement of the men when harvesting or planting is taking place.

But in any case, the cows must be fed, which is often done by applying the ‘zero-grazing’ method (c.f. page 7-8), with both men and women involved; these photos illustrate how this may be done when no fields for normal grazing are available:=



However, no doubt men have to work hard every day, like when bringing their harvest of sugar cane to the market in their nearby village:=



But how does this contemporary way of living and farming in Tanzania with little land available for the majority of small-holder farmers, compare to for example farm-life in Denmark? According to available sources it appears that we have to go some 200 years back in time to find similar conditions for farming. In those days land ownership was a privilege enjoyed by only a few. In fact, the majority of the farm population was living under miserable conditions, being subject to serfdom and without ownership rights to their farms'.

From <https://da.wikipedia.org/wiki/Landboreformerne> we read the following:=-

“Joint land ownership posed major obstacles to the farmers’ opportunities to improve agriculture with increased production. The agrarian reforms in Denmark became a decisive break with the feudal mode of production.

Agriculture was the main occupation and [200 years ago] approx. 80% of the population lived in the rural countryside. This put further pressure on the peasant because the population was increasing and the demand from abroad was great due to numerous wars. Agriculture had to increase production as it supplied the whole community with food and raw materials for manufacturing, craft and trade.

The purpose of the reforms on the part of the government was to create a more efficient agriculture that could provide better and more products in order to meet the high demand. This would result in price increases and benefit the Treasury.

During the reform period physiocracy (i.e., ‘the wealth of nations derives solely from the value of land development’) and liberalism proved their worth; agriculture flourished and the population increased. Proponents of the government and physiocracy had their intentions fulfilled and the real purpose was greatly fulfilled. Agriculture now became a self-governing body that did not need government intervention.

Now it was the market forces that kept the system going. In contrast to the English model, the Danish agricultural reforms were 'bottom up' and were introduced in breadth, i.e., by the peasants who in the future were to increase production to secure the Danish economy. It was these 'subsistence farmers' who had started the reforms with their dissatisfaction regarding their miserable living conditions”



Peasant from Northern Jutland dressed like many peasants in Denmark in the early 1800s.

Annex 3: Comments from readers regarding the development of Sustainable Agriculture in Tanzania:

On 2021-02-07 20:15, Kay Hahn wrote:

Thank you Svend!

I see this as a real valuable approach:

It does not need fuel, only hay. Your work can change something. I don't know why horses are not used in the EAC. Once I saw in a historic picture that showed trials for using Zebras. They also never tried to use Elephants as I saw it in India and Nepal.

Kay Hahn

Senior Expert Engineer for Hydro Power

SMEC East Africa

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On 2021-02-08 00:06, Per Østergaard wrote:

Hi Svend,

I read your note on Tanzania.

Smallholders can easily use horses for pulling farm equipment and thereby help increase production. When I see the huge land areas that are not used for anything in Tanzania, combined with population growth and the fact that the country is a net importer of food, and in addition that we also have to consider the need for general sustainability of production, I think it is important in Tanzania and in many other countries to have both a mix of small holders and of larger-scale farms.

The need for food is great and the need will only increase, so in order to "come along" and avoid humanitarian crises, it is necessary to look at sustainable models also in Africa.

Danish farmers now have a production where the burden on the environment per unit produced, is one of the lowest in the world; I see it as a great opportunity to copy this approach to Africa and thus solve some of the enormous challenges present in areas which suffer food shortages.

Hope you can use my input for something, and I would of course like to discuss it with you, possibly when I come to Africa again and preferably with your contacts in ministries and elsewhere.

Per Østergaard

Danish Dairy Farmer & Production Adviser

Aasholmvej 145, DK-9800 Hjørring, Denmark

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On 2021-02-12 19:07, Jackline Seni wrote:

I love the point about microfinance being a bad idea for small farmers.

Big banks charge less in loans and have great cushions to shield farmers in case of adversity

Jackline Seni

Country Director at World Possible, Dar es Salaam

On 2021-02-18 13:48, Kaj Mieritz wrote:

Dear Svend,

It sounds like if you propose to introduce the cooperative movement in Tanzania. It would undoubtedly be an excellent idea if the peasants would accept it, and interesting that plowing with horses is a step forward.

Best regards

Kaj Mieritz

Former journalist at the Danish Business News Paper Børsen

Annex 4: Article in the newspaper 'The Citizen' by Louis Kalumba on 17 January 2021

<https://www.thecitizen.co.tz/tanzania/news/president-magufuli-calls-for-increased-food-production-3259910>



President John Magufuli has on Sunday, January 17 called on Tanzanians to work hard in the fields in order to increase agricultural production especially food crops and turn the country supplier of consumables in the region.

He said following God's grace that has protected Tanzania from the plight of Covid-19, increased food production will enable the country to help other countries with food shortage after its citizens put under lock-down.

He said increased food production will also significantly contribute to the country's economic growth. Dr Magufuli made the statement at the Mary the Virgin Church in Chato Parish in Geita Region where he joined other worshippers for the Sunday Mass.

Delivering his message during the Mass, President Magufuli said Tanzania should use the absence of coronavirus in the country to work hard and increase production of food crops.

"It is raining now in different parts of the country. I call upon Tanzanians to work hard in the fields, cultivate agricultural products, especially food crops," the Head of State said in a statement signed by director of presidential communications Gerson Msigwa.

Dr Magufuli who was accompanied by his wife Janeth Magufuli called on the public to continue glorifying and thanking God for the grace that prevented the country from Covid-19 that is still claiming hundreds of thousands of lives worldwide.

During the mass presided by the Parish Priest Henry Mulinganisa, President Magufuli commended worshippers for successfully expanding the church building, something that has increased the number of worshippers who could be accommodated at once.

The Covid-19 pandemic has devastated production of food in many countries, accessibility and circulation due to disrupted supply chains leaving millions of people in acute food insecurity.

Increased food production will assure not only Tanzania with enough food to contain hunger, but also poverty alleviation as well as fighting malnutrition and stunting among the children.