

# **'GREEN REVOLUTION' IN UGANDA: POTENTIALS AND CONSTRAINTS FOR DIFFERENT CATEGORIES OF FARMERS**

**BY**

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## Introduction

The term "Green Revolution" (GR) has been taken for granted for too long to mean the introduction of high yielding varieties (HYV) of certain food crops, particularly wheat and rice, fertiliser, other agro-chemicals, and moisture control. GR technology may be applicable to favourably endowed areas, where accurate soil moisture conditions can be economically created. GR has over time outgrown this narrow definition because many varieties for many different environments, and with many different characteristics (drought/flood resistance, pest/disease resistance, etc) have been developed by plant breeders.<sup>1</sup> Pearce has argued for an essential change sequence in agronomic practises which leads to increased yields, resulting into a surplus and a greater purchase of agricultural inputs. This makes the farmer more involved in the market than he/she was originally.<sup>2</sup> Mosher goes beyond the farmer's involvement and stresses technologies by an interventionist state to promote agricultural growth, via commercialisation and industrialisation of agriculture, especially peasant economies.<sup>3</sup> Brown belongs to the school of more humanitarian thinkers when he emphasises the GR's potential for reducing world hunger.<sup>4</sup>

These ideas had one major shortcoming, namely: they fitted well in the development model obtaining in the 1960s and 70s, which emphasised urban and industrial growth through import substitution strategies. The strategies led cities to grow rapidly, and consequently, the need for more food. Shortage of food led to social unrest, which could easily ignite communism. GR became a development weapon against communism, capable of winning the hearts and minds of the masses, urban and rural. It became a strategy of expanding the market and consequently, undermining the self-sufficiency of economies of the world which traded very little.<sup>5</sup>

However, three distinct elements are usually singled out to offer a working or operational

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<sup>1</sup> A. Shepherd, Sustainable Rural Development, London: Macmillan Press Ltd, 1998, pp. 23-5.

<sup>2</sup> A. Pearce, Seeds of Plenty, Seeds of Want, Oxford: Clarendon Press, 1980, p. 158.

<sup>3</sup> A. T. Mosher, Getting Agriculture Moving: Essentials for Development and Modernisation, The Agricultural Development Council, 1966, p. 183.

<sup>4</sup> L. R. Brown, Seeds of Change: The Green Revolution and Development in the 1970s, New York: Praeger, 1970.

<sup>5</sup> A. Shepherd, op. cit., p. 25.

definition of GR. These include:

1. advances in plant breeding that produce high yielding seeds;
2. a package of technology, including fertilizer, insecticide, implements, water control, and HYV seed. In LDCs, 15-16 million of HYV rice and wheat had been planted by mid-1970s, of which 90 per cent was in Asia and nearly half was in India.<sup>6</sup> Pearce has studied the achievements of GR and has argued that since 1970s practically all governments have had HYV seed programmes and their use has become widespread. Thus, there are no meaningful statistics.<sup>7</sup> Due to this reason, Lipton and Longhust argue that to be precise we should talk of modern varieties since HYVs are not always the prime characteristic of the seeds or technological packages produced.<sup>8</sup> And,
3. an agricultural development strategy in which the application of technology to Third World agriculture is central to the problem of increasing production.

Element three is what most advocates of GR approach take to mean by the term. The critics, however, say that the application of such technology is often inappropriate and has created several problems than it has solved.<sup>9</sup> We going to see this fact in more detail later in the paper.

### **Is there a case for 'Green Revolution' in Uganda ?**

Before we undertake a synopsis of GR in Uganda, it is important to first see how it has fared in other parts of the Third World.<sup>10</sup> The conclusions there from, will help us to reflect on what our

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<sup>6</sup> idem.

<sup>7</sup> A. Pearce, op. cit., pp. 37-8.

<sup>8</sup> M. Lipton, and R. Longhust, New Seeds and Poor People, London: Unwin Hyman, 1989.

<sup>9</sup> Chris Nixon, Rural Development in the Third World, New York, Routledge, 1990, pp. 79-101.

<sup>10</sup> Ibid., p. 81.

small, medium, and large-scale farmers can execute to enjoy the benefits of the GR, if there are any or what modifications can be made to the revolution to suit the Ugandan conditions.

The dwarf wheat introduced into India in 1960s was initiated by various experiments conducted in Mexico in 1940s. It was this breed that was a key element in the expansion of Mexican agricultural production. During the next two decades, Mexico was able to increase production by 5% per year, and run away from food imports to food exports. However, it should be noted that the main goal of GR is not to export but to increase food production continuously above the population growth rate. Secondly, this increase was dependent on high technology input and due to this, a small number of large-scale irrigated farms participated. Small-scale Mexican farmers were almost excluded from this revolution.

In addition to the above observation, HYV was characterized by a high response to fertilizer, a short growing season, non-photo-period sensitivity, a resistance to disease, and its short stiff stem reduced harvest loss for it was now difficult to collapse under the weight of wheat ears.

The Mexican success was also experienced in India and appealed to planners who decided that the same experiments should be done with rice, the grain on which the largest population of the Third World is dependent. The early HYV rice seed shared the general characteristics of HYV wheat seed, except that it was much resistant to disease, very sensitive to environmental conditions, and demanded a high level of water control, land preparation, and tending.

The era of GR ended in 1970s. In 1980s we entered a phase of global agricultural development which emphasised sustainable agriculture. The phase arose out of the critique of the GR. There were two schools of critique of the GR movement, namely: the one which criticised the way how the new technology created inequality between areas and social groups leading to conflict, and the second, which criticised some of the technology's results which pre-disposed the users to health and environmental risks.<sup>11</sup>

Conway and Pretty have studied environmental and health costs of applying GR methods and noted that death and illness resulting from the application of pesticides have been significant in 'developing' countries. Chemical use is likely to be poorly managed too, given low literacy levels, language barriers, inadequacy of handling equipment and storage facilities.<sup>12</sup> The knowledge of the

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<sup>11</sup> A. Shepherd, op. cit., pp. 25-6.

<sup>12</sup> See Conway G. R. and J. N. Pretty, Unwelcome Harvest: Agriculture and Pollution, London: Earthscan, 1991.

hazards involved in the use of chemicals is hardly there, even among Ministries of Agriculture and Health staff. Many farmers still use pesticides which, according to World Health Organization's (WHO), are in the categories of 'extremely hazardous' and 'highly hazardous'. Given the principle of 'prior informed consent', i.e., the government which imports the chemicals gives its approval based on the full information supplied by the exporting country about the regulatory status of these chemicals, it is not possible to find a list of substances which are banned or severely restricted in certain countries (Advanced North) in Food and Agriculture Organization (FAO) or United Nations Environment Programme (UNEP) documents.

Scientifically, it may be hard to establish the health impact of pesticides or other chemicals. However, Bull has studied pesticide poisoning and concluded that the chemical use in modern agriculture contributes to the death of 10,000 people a year.<sup>13</sup> Given the continued use of these chemicals in the world, it is as if that figure is an acceptable death rate, when calculations are made about the cost and the benefit of GR. This calculation, however, is impossible to make because it is hard to put a price tag on the loss of life.

The problems have been recognised and 'developing' countries are working hard to have these chemicals banned or their use severely restricted. They have realised, as Beaumont has argued, that the chronic effects of low doses of residues are not known with certainty. The studies being conducted will not give results in the shortest time possible. Apparently children tend to be both more exposed and less able to deal with toxic materials in the body.<sup>14</sup> Despite this realisation, these countries are poor and lack resources for effective pesticide regulation and monitoring, provision of adequate medical facilities, education, extension and training work in pesticide use. Furthermore, information on alternative less pesticide dependent or non-chemical pest management systems is not widely available, although components of such systems are practised in traditional agriculture.

The environmental costs of GR have been loss of vital top soil which can only be built up slowly and painfully, pollution of soil, water and atmosphere, deforestation, irrigation rendering soils unusable or unproductive due to salinity, massive tampering with the eco-system such that gross imbalances and vulnerabilities are created, loss of genetic diversity in plants and livestock which

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<sup>13</sup> D. Bull, A Growing Problem: Pesticides and the Third World Poor, Oxford: Oxfam, 1982.

<sup>14</sup> P. Beaumont, Pesticides, Policies and People, London: The Pesticides Trust, 1993, p. 144.

reduces the ability of future generations to explore genetic options to their problems. GR emphasises the ecology of monoculture. The success of modern varieties means the displacement of not only traditional but also crops which cannot perform well. Increased cropping intensity due to irrigation and quicker maturation creates a uniform environment where pests and diseases can more usually find the food they prefer. So, in the long run, the set of modern varieties in use becomes less stable against pests and diseases, requiring a faster pace of research to produce new varieties.<sup>15</sup>

Pesticides are having enormous and well documented negative impacts on wildlife. Rachel Carson has argued that despite much progress in creating less toxic and more specific pesticides, species of birds (which control rodents), bees (which pollinate plants) and other wildlife continue to disappear at an alarming rate.<sup>16</sup>

Nitrogen and phosphate based fertilisers contaminate the environment, especially the water, to which they are drained into from the fields. In certain circumstances, they lead to eutrophication (death) of rivers, lakes and coastal waters. In addition, they reduce and damage the life of micro-fauna (decomposers) in the soil, the very creatures which keep the soil healthy and useful mediums for plant growth. This shows that chemical dependent agriculture destroys the medium it works with, and pre-disposes it to increased dependence on chemicals. The loss of soil decomposers makes it difficult for the organic matter to decompose properly, the soil structure degrades, and the soil is more liable to erosion. The by-products of fertiliser use, for example, nitrous oxide contributes to the destruction of ozone layer and global warming.<sup>17</sup>

It is already established that the HYV of wheat has poor eating, milling and nutritional qualities. It was even worse for the HYV of rice. There is an established evidence that an inverse relationship exists between protein content and yield of some HYV of rice. For this reason, in some parts of the world there is a high incidence of malnutrition, for example, Bangladesh, particularly among children. Secondly, the adoption of HYV of wheat and rice commits the farmers to annual purchases of seed. Re-sowing from harvested seeds, results into rapid loss of HYV qualities. This limits the possibilities of small, and medium-scale farmers to participate in green revolution. GR has resulted in conflicts where it has spread unevenly, and agriculture commercialised. Where successes

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<sup>15</sup> A. Shepherd, Sustainable Development, pp. 36-7.

<sup>16</sup> R. Carson, Silent Spring, London: Hamish Hamilton, 1963.

<sup>17</sup> See J. A. McCracken, G. R. Conway, and J. N. Pretty, An Introduction to Rapid Rural Appraisal for Agricultural Development, London: IIED, 1988, p. 47.

have been achieved, entrepreneurial farmers and/elites have often been quick to seize opportunities, grab land on the labour frontier and squeeze out traditional users of the land.

The laws and institutions of the state have often supported this process through granting land leases where traditional users' title to land is not well recognised in national law, and by providing all kinds of services to the colonising farmers (credit, extension, security). In Uganda, for example, the 1975 Land Reform Decree of the Amin regime gave a new lease of life to landlordism. By abolishing the 1927 Busulu and Envujjo Law, and by turning the landlords into lessees of the state and the tenants into sub-essees, it removed protection of the law from the tenant, and left rent in each case to be worked out by the pull and push of class relations on the ground.<sup>18</sup> In the wake of this Decree, bureaucratic petit bourgeois elements with state connections, made non-sense of customary tenure where it existed by grabbing large tracts of land on 49-or 99-year leases. Talking of the changes brought by this Decree, Mamdani has argued:

The introduction of the capitalist-type tenure into Lango was accelerated by a vester of laws introduced after independence, culminating with the passage of the 1975 Land Reform Decree by the Amin Regime, significantly a decree which none of the post-Amin regimes have ever attempted to repeal!

The decree abolished both 'absolute ownership of land' (freehold land held predominantly in Buganda since 1900 Agreement) and the power of the customary tenant to stand in the way of development. All land was henceforth to be held on a 99 year lease. With the stroke of a pen, the 'customary tenant' became a tenant-at-will of the state. The District Land Commission, a body predominantly comprising state agents at the district level, was empowered to terminate any lease on 'undeveloped' land and grant it to a potential 'developer'. Such a lease-holder was 'free to evict any tenant occupying any part of the leaseholds granted to enable him to develop the land.'<sup>19</sup>

He continues:

Because the sale of land is an occasional and recent phenomenon in this region, a bureaucrat capitalist cannot begin by 'buying' land, he must 'claim' it! This means every bureaucrat capitalist has necessarily to return home in 'his [her] own area' and to none other. He returns to the land of his forefathers, and lays claim to tracts of unused land, anywhere from 50 to 100 acres. Note that given the immediate communal past, he [she] does not have to buy the land. He has simply to claim that is

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<sup>18</sup> See M. Mamdani, "Contradictory Class Perspectives on the Question of Democracy: The Case of Uganda" in Peter Anyang' Nyong'o (ed.), Popular Struggles for Democracy in Africa, London: Zed Books Ltd, 1987, pp. 78-93 for the details of this argument.

<sup>19</sup> Cited in Ondoga ori Amaza, Museveni's Long March: From Guerrilla to Statesman, Kampala: Fountain Publishers, 1998, p. 197.

where his [her] foreparents farmed, as if they had only one foreson! For the rest, the preferential treatment of local chiefs and other state officials who compromise the District Land Committees suffices.<sup>20</sup>

Poverty still looms large in countries where GR has succeeded. This mystery is explained by Lipton and Longhurst as due to population growth, geographically uneven development, and the consequent tendency for the poor to migrate from marginal to prosperous areas in search for paid work. Labour is plentiful, while land and possibly inputs are scarce. There is sequential development in the labour market: initially demand for labour increases, especially at particular seasons (e.g. the main crop harvest, and the first weeding of the first crop); this attracts labour migrants, and also persuades farmers to invest in labour-displacing mechanisation. Both depress wages in medium term to long term, and rob the workers of their share of increased incomes.<sup>21</sup> With these new labour relationships the share of income going to women has declined as a result of mechanisation and income-generating tasks being taken over by men.<sup>22</sup> Out of these arguments, we can formulate radical conclusions about agricultural development policy: that influences on agricultural wages are critical in the fight against poverty and hunger; that rural workers' organizations and negotiating power are vital; that land and other asset redistribution may be the keys to poverty alleviation.

In summary, this is what accrues from the execution of GR programme i.e., application of new inputs, for example, HYV seeds, fertilizers, pesticides, water pumps, and tube wells which in most cases are imported (most of these things can be produced locally). Due to the price of these inputs, the resources which were once equally spread on the whole population are concentrated only on a small percentage of the cultivated land and principally on only one crop. The revolution tends to be "farm size specific" for greater access to effective irrigation and the capital necessary for land improvement and water control; where the revolution has been established the average farm size and landless labourers have increased. Furthermore, landless labourers migrate to urban centres in search for work and this has increased violence in many rural areas of the Third World; and, displacement of staple food crops by HYV of wheat and rice has reduced the supply of the basic food of the poor. However, this is not to imply that the revolution has not had worthwhile success as I have laboured to show in the Mexican and Indian examples. Despite these successes, the United Nations Development Programme (UNDP) has been challenging the GR approach. The challenge lists

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<sup>20</sup> idem.

<sup>21</sup> Lipton and Longhurst, New seeds and Poor People, pp. 204-6.

<sup>22</sup> A. Shepherd, Sustainable Development, p. 30.

considerations which should be ingrained in programme and project conceptualization and implementation checklist as:

- .farmers' involvement in technology generation;
- .a participatory and gender sensitive approach in every phase of the programme;
- .the decentralization of research from IARCs and re-orient extension to farmers' needs, and to work in partnership with farmers;
- .high genetic diversity of crops;
- .breeding for high yields with modest nutrient levels;
- .more attention to local agro-ecology;
- .more imaginative use of variety of basic agricultural technologies (water and soil conservation, rotations, sequences, agro-forestry, nutrient recycling, livestock-crop mixtures, alley cropping, etc);
- . farming systems research and extension; .participatory rural appraisal;.put people's priorities first-deal with their livelihood issues;.decentralize, devolve, and privatise-responses to complexity and diversity.<sup>23</sup>

The UNDP's position has been arrived at as a reaction to Chapter 14 of Agenda 21, which treats Sustainable Agriculture and Rural Development (SARD). This chapter recognises that the success depends on: participation of rural people, including women, the devolution of responsibilities to local level, change in the role of government towards better resource allocation policies, access to land, strengthened public research respecting traditional knowledge and techniques. Despite these orientations, the SARD documentation has the following shortcomings: it ignores demands for popular movements yet it argues for participation, ignores successes of traditional agriculture, does not take a radical enough line on land ownership, encourages market against peasants' demand to stay out of it, and devotes the best land for cash/export crops, it zones land into high and low potential and argues for intensification (including monocropping and livestock rearing) on high potential land with strong reliance on external inputs, and resettlement programmes are recommended where there is 'over population'. This shows that the UN system is about dressing up its conventional dualistic agricultural strategy as an environmentally sustainable one. Its predictions on fertilisers and chemical use in 'developing' countries based on population and production statistics are widely believed to be full of error

Integrated pest management (IPM) has been designed to minimise pesticide use by increasing diversity of, and improving balance between, life forms in a farm system. It stresses methods such as

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<sup>23</sup> UNDP (United Nations Development Programme), Sustainable Human Development and Agriculture, New York: UNDP, 1994, Chapter 2.4.

crop rotation and succession, companion planting, plant pest repellants, the use of physical barriers, biological predator control, multi-variety planting, intercropping, and a wide range of specific cultural practices to reduce pest habitats and increase predator survival. The implementation of IPM is surrounded with a lot of difficulties: it requires a radical redesign of farming systems, it requires the farmer to be able to predict outbreaks of pests or disease i.e., a better understanding of pest ecology and pest population dynamics, and it requires the farmer to promote agro-eco-system diversity i.e., to enhance diversity, and leave nature to offer its possibilities.

### **Land Tenure System in Uganda<sup>24</sup>**

Having seen that GR to the largest extent is "farm size specific", we need to critically examine the way how land in Uganda is managed and handled. The question of land in Uganda has been written about by scholars who have emphasised that the 'peasants', especially those in Buganda resisted the colonialists and their Baganda collaborators in taking over their land. H. W. West writes about mailo land as follows:

It has been noted..., at the time of the early implementation of 1900 Agreement, little or no notice was taken of old rights of occupation and the rights of the old bataka were repeatedly ignored.<sup>25</sup>

The forms of land tenure prior to the enactment of the Land Act 1998, to a certain extent, impaired socio-economic progress with regard to the GR itself. When the British colonialists divided the land into crown land (public land) and mailo land that was meant for chiefs who had collaborated in the colonization process, this meant that the local people who before colonialism had land became tenants on their land, and the chiefs exacted tribute from them.

The mailo land tenure granted large chunks of land to Baganda chiefs. This grant did not take

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<sup>24</sup> See Mahmood et al (eds), Uganda: Studies in Living Conditions, Popular Movements, and Constitutionalism, Vienna, JEP Book Series, 1994, pp. 17-61.

<sup>25</sup> Cited in The New Vision, June 2, 1998, p. 6.

into account the pre-existing rights of local people over land. It was for this reason that they were to pay an annual fee (busuulu) for the use of land and tribute (envujjo) for such crops grown. However, this created a certain class of people; the absentee landlords.

Instead, the colonial collaborators who were given huge chunks of land, to act as the pre-colonial bataka, started to extort a lot of wealth from the ordinary people, far in excess of the traditional feudal relations. The pre-colonial mutaka,

had been also entitled to a tithe upon the produce of peasants' land under his [her] control. By tradition, such tribute, usually in form of bananas, beer or goats, was intended for sustenance, only, of the mutaka and not for his [her] profit in any commercial sense. But a radical change in the concept of this envujjo occurred when, with spread of cotton cultivation, the landlords extended it to include a proportion of peasants' cotton crop. It is said that, in some localities, mailo landowners demanded as much as one bag out of every three from the produce of the peasants' cotton plots.<sup>26</sup>

The peasants in order to air out their dissatisfaction, jointly combined with the bataka and formed the Federation of Bataka, which was pressing for the return of the old customary forms of tenure. In 1924, the Griffin Commission was appointed to look into this discontent, and it recommended the establishment of an Arbitration Court with powers to give the Butaka land to their original owners. This recommendation, however, radical could not be implemented because it had not taken into account the position of bonafide buyers who had bought land from their original allottees. That is why the colonial government opted for the 1927 Nvujjo and Busulu laws. These laws were able to control rent, which was a major source of the discontent, and stopped eviction of peasants by the landlords. The consequences of these laws were:

1. In 1920s alone, there were about 10,000 title holders while the ordinary Baganda and other tribes who had been turned into serfs on their own land were about 750, 000 people along with their Bataka. Even today, when the population of Buganda is 5.5 million, only 300,000 mailo titles have been issued.
2. The mailo land, apart from dispossessing people was also anti-development, because it introduced feudal relations rather than productive relations. As way of speculation, if the 1,000 or so chiefly

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<sup>26</sup> ibid., p. 7.

families, each with 8 square miles, had become modern farmers, the economy of Uganda would have been transformed by the early part of this century. President Museveni gives this evidence by comparison:

Compare the low productivity of these huge chunks of land with, for instance, the few Asians that have been utilising land. Take the Madhivanis, for instance: At Kakira, they have 22,000 acres of land (34,4 square miles) but are currently using only 19,000 acres (29.6 square miles). In this space, all things being equal, the Madhivanis, exploiting sugar, are able to produce 70,000 tonnes of sugar worth 30 million US dollars per annum. ... What did the 50,000 square miles produce this whole century?"<sup>27</sup>

Despite these negative consequences, in 1964, the government introduced the Ankole-Masaka Ranching Scheme. Its aim was to convert the 3,000 square miles into 5 square mile-ranches. This whole place was to be given to only 600 individuals, mainly absentee landowners trying to do ranching. Part of this land had been infested with tsetse flies and therefore did not have cattle keepers at the time of establishing the ranching scheme. Many cattle keepers had turned into 'universal nomads' to areas where they did not have land rights. Therefore, as Museveni argues, "in the interests of development of the beef and diary sector, the interests of justice and of levelling the playing field for all communities of Uganda, these nomads should have been the first candidates for resettlement in this vast ranching scheme in their ancestral home."<sup>28</sup> What Museveni forgets is that the capitalist conceptualisation can not aim at popular development and justice.

Instead, traders from town, civil servants, chiefs, etc monopolised the scheme. Surprisingly, many of the allottees had no cattle. Once the ranches were allocated, they converted the traditional keepers into tenants, having to surrender cattle on annual basis to these absentee landlords as rent. In other areas where there were no tsetse flies, for example, Mawogola, the cattle keepers were simply evicted. The consequences of these moves were:

1. The ranches were non-developmental on account of relying on 'telephone' farmers who were civil servants, traders, etc rather than relying on traditional farmers.
2. Incredible injustice was inflicted on the indigenous people by dispossessing them.
3. They desecrated the ancient heritage of the country, because the allottees were people who had no

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<sup>27</sup> idem.

<sup>28</sup> idem.

roots in the area nor respected the history. They did not bother about the names of the places, but ranches were given numbers.

4. The foreign bias of the scheme could easily rob the country of the rare genetic materials in the animals. The ranchers were being encouraged by veterinary officers socialised in the half-baked development theories, to have borans, red-polls, fresians, that indigenous cattle had a low genetic value. Studies have indicated that this Ankole breed, which was a subject for extinction on account of misguided studies, has got unique qualities, especially the yellow fat, which has got low cholesterol. In conclusion, Museveni makes a correct observation, when he says:

This goes to show that sensible development should, mostly, start from the base. It is most durable and you get more transformation that way. That is one of the reasons, I suspect, the Chinese and Japanese economies do so well. They build on the heritage. The colonially inspired African intellectual, on the other hand, believes in constructing foreign models on the skeletons of his [her] heritage, except where they are using the façade of 'culture' for greed while, in fact, they are promoting anti-people aims and schemes.<sup>29</sup> (emphasis mine)

The Land Act (1998), which claims to correct the above injustices, is premised on seven principles as a way of generating compromise from all stakeholders to resolve the land question. These are:

1. recognise the titles given subsequent to the 1900 Agreement of Buganda and such other agreements and the titles given by subsequent regimes, however, inconsiderate the policy may have been, because many of the title holders are bonafide purchasers from original allottees,
2. ensure that lawful and bonafide occupants are protected from eviction,
3. re-introduce nominal rent but not commercial rent because you are dealing, in the main, with illiterate peasants, fully conscious that the initial blow against illiteracy in the history of Uganda is the recent NRM policy on UPE which will take time to bear fruit,
4. provide a Land Fund, on soft terms to the borrower, from which the tenants could emancipate themselves, thereby freeing the tenant at the same time as you empower the landlord cash-wise,
5. resolve the relatively recent historical distortion of the Ankole-Masaka Ranching Scheme by enabling ranchers and squatters to live side by side as recommended by Ranches Restructuring Board,

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<sup>29</sup> idem.

6. enable those who live on communal lands and customary users to get titles if so they so wish, and
7. giving some security to the whole family in the matrimonial home.

Because of principle 5, a research was conducted, it was found out that out of 150,000 cattle in Mawogola area, 120,000 cattle belonged to the 'so-called' squatters. Currently, one sub-county of Kebishunga in Nyabushozi supplies 20,000 litres of milk per day to the dairy Industry. Even, cattle being slaughtered for meat by Meat Packers in Kampala, about 90 per cent of them come from the traditional cattle keepers. This is the contribution of traditional cattle keepers to the national economy which the colonial and neo-colonial economy had derided.

The 1995 Constitution vests land in the people of Uganda. Secondly, peasants on small holdings owned by big landlords recently scored success when a Land Act was passed which gave them security of occupancy. They can now apply for and get certificates without any kind of fear of being kicked off the land by landlords. This also means that the poor have now the means to engage in increased production while at the same time contributing to national food security. However, the Land Act as it is can be criticised. While there was security of tenure in the pre-1975 situation, under the Act there is fixed rent. If the person fails to pay for four years, he/she is evicted. The Act creates dichotomy between landownership, occupation and control. Ownership and control should be one thing for to do otherwise would be entrenching feudal relations where the owner is simply a parasite on the real producer. There is no bank which will give credit to a person who occupies the land he does not own. The Act hoodwinks the landlord because it gives him/her the power to sabotage. There is nothing he/she can do with the title. What is the use of the title when the landlord has no power over it? This Act, "does not deserve the name of land reform", Mamdani argues.<sup>30</sup> It is designed to benefit the investors, especially the foreign ones. It is not concerned with the simple peasant or the 'progressive' agriculturalist. It ignores the weakest and most vulnerable sections of society: the undocumented tenants and spouses. There are three types of tenants: a). legal b). customary c). squatter. The Act deals with the legal tenant and leaves the squatter. Mamdani calls this legal fetishism because it defines a tenant by document rather than by land relations between the tenant and the landlord. It, also, defines a marriage by legal documentation rather than by the time a couple have lived together. It creates distinction between marriages and cohabitation. It talks of documented marriages and does not give rights to women whose marriages are not documented. It discriminates against the customary landowners because it does not give them automatic security like it does to title

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<sup>30</sup> See *The Monitor*, 29 June, 1998, p. 1.

holders.<sup>31</sup>

Government should not have power to expropriate land without providing alternative and compensation to those concerned. Any legislation on land should ensure optimum possibilities for the poor peasants to utilise land by giving them ownership rights and protecting them against land grabbers and speculators. The second fetish in the Act is dogma i.e., the need for uniform land law. They want the same to happen everywhere. Uganda is not homogenous, it is highly diverse: agricultural/pastoral land versus urban/rural land. While it is good to have uniform land policy it should conform to these divergencies when implementing it in different parts of the country. There should be a ceiling of how much land an individual should own and the land market should be between users so as to block speculators. Members of Land Board should not be dismissed by the President but answerable to Parliament. Finally, all purchases of land should be public and people should be given a month to register their objections.

### **The Composition of Uganda's Population<sup>32</sup>**

Uganda's class character does not augur well for GR. Nearly over 90% of Ugandans live and work in the countryside on small holdings. The rural population is not homogenous. In areas like Ankore and Karamoja there are pastoralists. Elsewhere cultivation dominates.

Small elites have controlled the affairs of the country. These are African intellectuals, entrepreneurs, and professionals. The working force is also small: factories and plantations are not many. Finally, there are urban poor and semi-squatters whose conditions are generally worse than those of poor peasants in rural areas.

Among the group of 90% we have three types i.e., the poor peasants, middle peasants, and rich peasants. The poor peasants have land tilled by family labour and do not obtain the family's subsistence requirements. These are labour poor and cannot open up more land, moreover they do not own it. Some are weak due to old age. Yet they have no capacity to hire labour. The children

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<sup>31</sup> ibid., p. 2.

<sup>32</sup> This section is based on the recommendations and analysis as provided by the Report of the Uganda Constitutional Commission, published in 1993, pp. 60-63.

who would help them either ran to urban areas to look for jobs or they stay but do not see a developmental perspective or some are being killed by the AIDS scourge. Many cannot cultivate more than they are doing because their implements are poor. They use worn out hoes. To hire a tractor or an ox-plough is very expensive. And for those who are still strong, they cannot afford to hire these implements. In such a category, it is a lot difficult to introduce the package of GR.

The middle peasants have family land and at times can rent land for production. They till this land using family labour and are able to hire labour only during the seasonal peaks, for example, harvesting and planting seasons. They do not hire out their labour for they are occupied on family land. The family monetary requirements are met by the sales of the produce of their farms. They do not hire effective means of labour for to do so exposes them to relations of exploitation. They do not enter into such ventures as rearing cows (many, however, have few cows) or opening up more land where a high labour input is required. This category is transitory in nature; and, this implies that its constitution is largely a result of the process by which the peasants strive to acquire more independence as producers in the process of producing to realise a surplus. It might as well be a transition to the worse, i.e., the gap between the large-scale farmer, middle-scale, and poor farmer widening probably due to the implementation of structural adjustment programmes. This category, however, provides a fertile ground for the package of GR if proper management of the latter is ensured. For they can have sales from their surplus which could be used to improve their farms. In the later section we shall see how these peasants will be encouraged to do sustainable agriculture.

The rich peasants, in addition to the cultivation they are involved in, have other economic activities like trade, craft making, and beer brewing. Some of them rent land and use hired labour to till this land. These are in better positions, in combination with the middle peasants to raise land for common production for effective implementation of GR . We shall see later how this view will be developed and incorporated into the principles of sustainable agriculture.

The same categorization can be applied to pastoralists, and as we shall see later, how they will be incorporated in the package, because, their animals also need farm management techniques that are well adapted to the changed environment to produce better and well adapted breeds.

With government policy of liberalization, the elites no longer go to government for employment. In the process of scaling down government expenditure and pruning ghost workers from the pay-roll, the Civil Service has been re-structured to make it small and efficient. In the process many, have been retired in the 'public interest'. With enough education programmes on how well

their retirement packages can be utilised, they can be of great use in the sustainable agriculture programme. Definitely, this augurs well for entrepreneurs and professionals. They can be involved in large scale agriculture or in marketing of the produce by establishing private companies to handle the programme of sustainable agriculture..

A point of emphasis under this section is the status and role of women in Uganda's agriculture. The latter cannot advance without effectively mobilising the efforts and resources of the women who play a critical role in it. The women's participation in agricultural tasks will be dealt with in the next section.

### **"Green Revolution" in Uganda**

Out of these problems the Government of Uganda decided to modernise agriculture. Modernising agriculture means introducing specialisation and exchange. The farmer specialises in one or two crops or engages in other lucrative agricultural activities. They will exchange these products with other people in the economy. Secondly, the rural economy must be monetised so that money becomes the nexus between one producer and another in rural areas, and also between them and urban producers. This will entail improving agricultural techniques, whether aided by chemicals, machines such as tractors, relying on organic means of fertilization or improved seeds. Agriculture becomes commercial with farmers producing what is profitable for them. This policy would make agriculture most profitable to the farmer than it was in the colonial period, when they produced low-value crops on their small holdings, not for their benefit but for the colonial industries. They earned 'peanuts' from their labour after sale. Of course, the colonialists benefit as a result of aggregate number of semi-slave peasant farmers that produced huge amounts of raw materials.

Modernizing agriculture will eliminate poverty because the assumption is that farmers are poor due to:

- (i). low yields per acre because of 'backward technology' in form of inferior seeds and poor farming techniques;
- (ii). low-price crops produced on small scale because of land fragmentation;
- (iii). use of rudimentary tools, for example, a hand hoe instead of say ox-plough;
- (iv). leaving food security to free market forces when society is not yet sensitised to benefit from the free market and is still addicted to commandist colonial strategy of bye-law food security crops and

caning to make people grow cash crops.

Low yields are handled by increasing productivity through use of high yielding seeds or planting or stocking material. National Agricultural Research Organization (NARO) avails these seeds for multiplication by gazetted institutions and individual farmers. Stockists closer to the farmers are gazetted to sell improved varieties. The gazetting is done in collaboration with the farmers' organizations and District Authorities. Training of farmers to improve on their farming techniques is done through demonstrations at farm level and at each sub-county headquarters.

Crops or animals or fish which are grown or reared on small scale but give high returns to the farmer have been identified and they include clonal coffee, macadamia, spices, oil palm, citrus, rabbits and vanilla. The country is sub-divided into production zones for these crops or enterprises to initially enable the building of capacity in their production, marketing, and processing.

Technologies of the type of oxen or donkeys are to be popularised through training and availing the oxen or donkeys plus related implements to the farmers. The private sector is encouraged to support the tractorization programme. Government has no role in the business of hiring out tractors and related implements. This is a result of proven inefficiency of Government owned machinery units. These programmes are to be supported by existing credit facilities that will further be polished and boosted to support further the farmer.

The leadership of all districts has been mobilised and sensitised on the issue of food security. Bye-laws must be reactivated to ensure that there is food security right from the household to the national level. To be specific the household must be food secure and must have a granary or famine crops such as cassava or yams. Government should be called in to avert a crisis.

Even when the government argues that the leadership of districts have been sensitised about food security, it only does so when the country is faced with famine. This shows that the government has not evolved a food security policy to avert famine crises. What it does is to institute ad-hoc mechanisms, which evaporate as the famine situation improves. To clarify on ad-hoc mechanisms, we refer to the period when a member of parliament was about to move a motion to declare a state of emergency over the districts that were suffering famine, government responded by giving a statement defining the steps being taken to deal with the prevailing famine situation in the country. In that statement, the Prime Minister committed government that it is taking measures which are intended for increased food production and security. This, interalia, included irrigation, use of appropriate technology for production of adequate and improved seeds, and the enactment and enforcement of

food bye-laws by local authorities to ensure food security. Government also intensifies research in appropriate technology and embarks on sound agricultural practices and social mobilisation.

In a more sober mood, but attacking the MPs as well, the Prime Minister made it clear to the members of the House that:

Hon. Members will agree with me that it is our responsibility as people's leaders first and foremost to educate the population on food production and management. The failure of this nation to feed her people paints a negative picture on both the local and national leadership who are supposed to educate and mobilise wananchi for increased productivity and safe farming practices. ...Hon. Members must not wait until the people are suffering and try to use the occasion for debate. ...I therefore, appeal to you Hon. Members to closely liaise with the local leaders and the electorate to ensure that all the people are sensitised on correct farming practices which will ensure availability of food across the country at all times...<sup>33</sup>

In response to this statement, one member pointed out:

... These are no serious plans. I do not recall in his statement mentioning, what the Food Security Policy is in this country; he is only talking about measures (read ad-hoc mechanisms) which are no different from other so-called relief measures. He has not talked about food or stock piling; those are measures I can say somebody is serious on.<sup>34</sup> (emphasis mine)

Emphasis has been put on Food Security Policy because it is an area which has been studied in this country. It is argued by Prof A. Nsibambi that post-independence governments have adopted strategies which undermine the realisation of food self sufficiency and a balanced diet. The reasons for this situation are three, namely: governments have been pre-occupied with political survival that they do not have enough time to examine the policies, 'developing' countries can not have independent food security policy because finance capital determines the policies they adopt, and the agricultural policy centres on producing traditional cash crops (cotton and coffee) at the expense of food crops.<sup>35</sup>

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<sup>33</sup> Parliamentary of Uganda, Hansard, Kampala: Parliamentary Printing Press, 1997, p. 1964.

<sup>34</sup> ibid., p. 1965.

<sup>35</sup> A. Nsibambi, "Solving Uganda's Food Problem", in H. B. Hansen and M. Twaddle (eds.), Uganda Now, London: James Curry, 1987.

He further argues that in Uganda detailed arrangements to market coffee and cotton, exist while arrangements to market food crops are inadequate. Even where mechanisms were put in place to perform this role, there are disparities between government controlled prices and market prices. However, this seems no to be the case today because prices have been liberalised. This has made traders take advantage of food producers in the remote areas, who are not aware of the changing market forces. The business person realises that the peasants do not have lasting and viable storage facilities, and pay them a price less than they really deserve. This is the reason why the state must intervene in marketing to provide food stocks and it must provide security and ensure that a viable and integrated transport system exists. More, food marketing is handicapped by the absence of viable and modernised wholesale systems. These problems are accelerated by the absence of a nationwide information system on the food situation. Many producers and traders are not continuously in touch with each other. This results into one part of the country starving while another is having surplus food. All these problems are being faced because post-colonial governments have followed a disjointed incremental food policy. It is a policy basically centred on exporting cash crops.<sup>36</sup> We recommend a policy that focuses attention on food production for domestic consumption and for export to food deficient neighbours.

Mohamed Gakou studied the crisis of agriculture in Africa and concluded that resources were being extracted from the agricultural sector to finance the rest of the economy.<sup>37</sup> For example, in Uganda, 99 per cent of export-earnings come from the agricultural products produced by peasants, but the latter are in the category of the absolute poor.<sup>38</sup> This, therefore, means that in the agricultural sector efforts were being made to produce products which were demanded on the world market. Such policy led to continued decline in the capacity to produce local food stuffs in order to satisfy food requirements. The great famines of 1970s in Africa are the consequences of the strategies and policies

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<sup>36</sup> idem.

<sup>37</sup> M. L. Gakou, The Crisis in African Agriculture, London: Zed Books Ltd, 1987, p. 18.

<sup>38</sup> J. Kiiza, "Liberalisation Policies and University Education in Uganda: An Assessment of Cost-sharing Policy" Makerere Political Review, Vol. 1 No. 1, 1997, p. 76.

that underpinned the development options of the post independence governments.<sup>39</sup>

Some of these strategies seem to underline the current policy of modernising agriculture, for example, the introduction of crops, animals or fish which can be produced at a small scale but give higher returns to the farmer. Many of these crops are not food crops, therefore, the government's intention is to have them exported. Such policy does not take the food problem as a priority. Instead, it resembles the development strategy which condemns food crop agriculture, devoting meagre resources to only crops which are bound to aggravate dangerously the food production situation. Modernisation of agriculture in Uganda should have reflected on the manner of re-organising production and exchanges among various sectors of the economy to achieve self reliance, the immediate aim of which is food self-sufficiency. The re-organization can be done in the following areas:

1. In raising agricultural production and productivity, substantially and rapidly with priority for food production.
2. In ensuring that the increase in agricultural production is accompanied by a substantial raising of the standard of living of the peasants in the country-side.
3. In promoting a selective industrialization coordinated with and sustaining the development of agriculture.
4. In giving human power in these industries wage levels that guarantee the full reproduction of their labour power and the up-keep of their family.

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<sup>39</sup> M. L. Gakou, op. cit., p. 18.

5. In producing mainly for domestic market in both agriculture and industry and be oriented wholly towards mass production.<sup>40</sup>

Whereas Museveni argues that there should not be urban farming because it scares off the investors<sup>41</sup>, he must be reminded that due to the crisis of institutional breakdown, economic mismanagement and civil strife in the 1970s and 80s, people had to diversify income generating strategies beyond formal employment, trade/wage labour. One of the activities they involved in to make ends meet was urban farming.<sup>42</sup>

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<sup>40</sup> ibid., p. 84.

<sup>41</sup> See The New Vision, November 1, 1998, p. 1.

<sup>42</sup> See D. G. Maxwell, "Urban Agriculture: Unplanned Responses to the Economic Crisis" in H. B. Hansen and M. Twaddle, Developing Countries, London: James Curry, 1998.

Maxwell identified two different kinds of agricultural production taking place in Ugandan urban centres. First, they are few commercial farmers, producing primarily for sale to the urban market. Second, the vast majority of the farmers produce primarily for home consumption, though they may sell varying amounts of their produce depending on the need for cash, sources of income, and intra-household distribution of income.<sup>43</sup> Though, he argued that this urban farming was in response to unplanned economic crisis, since it promotes food self-sufficiency for the household; the goal of any agricultural development, it should be supported and encouraged. Therefore, the government's move to post extension workers to every sub-county in the country should not leave out municipal divisions or city divisions to give agricultural knowledge to these urban farmers.

However, the extension workers who are to be sent, should be socialised in 'farmer-first' approaches. Those who have been trained to see farmers as passive and some what unthinking individuals, should be re-socialised. This is what used to be conventional approach which emphasised 'transfer-of-technology'. In this approach, priorities are determined by scientists, who generate technology on research stations and in laboratories, to be transferred through extension services to farmers. On the other hand, the 'farmer-first' approach is the opposite of the conventional approach.

Robert Chambers et al. have written about it as:

Instead of starting with the knowledge, problems, analysis and priorities of scientists, it starts with the knowledge, problems, analysis and priorities of farmers and farm families. Instead of the research station as the main locus of action, it is now the farm. Instead of the scientist as the central experimenter, it is now the farmer, whether woman or man, and other members of the farm family. ...farmers' participation and priorities are recurrent themes and reversals too are central. Together, these elements can be described as 'farmer-first'.<sup>44</sup>

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<sup>43</sup> ibid., p. 99.

<sup>44</sup> R. Chambers et al. (eds.), Farmer First: Farmer innovation and Agricultural Research, London: Intermediate Technology Publications, 1989, p. xix.

Even when Prof A. Nsibambi argues that the efficacy of extension workers has been reduced by lack of transport to enable them visit the farmers, and their advice having limited results because it is not followed by inputs, credit, marketing facilities, and knowledge of climatic changes<sup>45</sup>, the main point which explains their poor performance was denying the farmers to participate in technological and research development. This conclusion is based on the fact that farmers have been dedicated plant and animal breeders for thousand of years. They have consciously maintained diversity, planted mixed fields systematically to achieve natural crosses, practised selection and set up their own personal gene banks as well as far-flung exchange systems for acquiring new genetic material.<sup>46</sup>

### **The chances of small-scale farmers in "green revolution"**

Having seen the plight of poor peasants in Uganda in the last section, the process of making them participate in GR, which we are advocating for that is different from the type which so far we have criticised, cannot be generated spontaneously. It requires a catalyst.<sup>47</sup> Through a process of awareness creation, initiators mobilize people into self reliant action and assist in the building up of collective strength and bargaining among the poor. The initiators must be well "trained" in the real sense of the word i.e., conventional training methodology cannot be used for this purpose. It should be a process of self-learning i.e., observation, sharing, and comparing experiences, criticism and self-criticism, cultivating behavioural and social skills. Without this awareness people cannot participate.

Agricultural Extension Service should be staffed with the initiators I have talked about above. These would be the people who have made the situation of the small farmers their own. Their services would induce the small farmers to unite in informal groups i.e., to pool resources together to purchase improved seeds, have a common production farm that implies marketing the surplus together. The formation of these groups should not be state-sponsored but spontaneously generated. The work of the initiators would be to facilitate the processes of small farmers working together. These groups should not be unnecessary big. They could be of 5-10 small farmers. The establishment of these minute informal groups provides the best channels through which credit can be given to the small

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<sup>45</sup> A. Nsibambi, *op. cit.*, p. 150.

<sup>46</sup> R. Chambers et al. (eds.), *op. cit.*, p. 6.

<sup>47</sup> Local participation as brought by NGOs and government may also not be enough to engine rural development. It should instead be spontaneously produced by the rural people.

farmers. Such credit should not be tied to a collateral security like in a bank, but success of repayment may depend on administrative arrangement i.e., the credit is extended to one small farmer in the informal group and his or her failure to pay means that other members will not enjoy the same facility or for them to participate in the credit facility should now pay for him or her. Therefore, the group will form a collective action against the individual to have the loan re-paid. The loan could be used to purchase agricultural inputs.

Before we move away from this category of farmers, the extension staff should insist on using sustaining agricultural inputs, for example, sustaining fertilizing techniques and sustaining field management techniques. Some of these inputs are locally found and are cheaply obtained, before their advice to the farmers that they should buy fertilizers, pesticides and so on which may have adverse effects on the environment and soil fertility.

### **Medium-scale farmers**

This is the most important group with regard to 'green revolution'. As already expressed they can afford animals. They hire labour and sell part of their produce. The Agricultural and Veterinary Extension Service can exploit their characteristics to the advantage of GR. It is important that the initiators should facilitate them to form common production and marketing units. These co-operatives should be non-governmental. The most input should come from the medium scale farmers. In their meetings, their interests should be well articulated and look for ways of improving their farm management techniques. The latter should include the environment friendly practises such as green manure in contrast to phosphate-manufactured fertilizers, local pesticides to chemical ones, natural weeding to spraying, and so on. The technology applied should be energy and labour saving, for example, the use of animal traction to the motor one, appropriate means of harvesting to combined harvesters and so on. In case, it is difficult for these to acquire these agricultural inputs a line of credit should be extended to them in their non-governmental co-operatives. This credit should be in form of the inputs and not liquid money. For example, the provision of ox-ploughs can be done on that basis. Payment of such credit should be made at first harvest in accordance to agreements signed. Failure to pay means the co-operative decides not to loan you the ox-plough next season.

The profits made after harvests should be re-invested in agriculture, most especially in improved breeds of animals. They may not need a lot of land to start a farm but practices of zero-grazing can be encouraged. Emphasis should be laid on the quality of animals and their output and not on their number. Improved breeds of poultry should be tried for such projects require little space but a lot of commitment. However, this sacrifice is paid for by the output. The extension service would have made it clear how such projects are managed for effective output.

### **Large scale farmers**

From the start it should be made clear that we have few farmers who are doing agriculture on the large scale in Uganda. Instead, they used to call them 'progressive' farmers. This group of 'progressive' farmers has not been progressive as the name suggests. These were farmers who managed to get land from government to do farming when they were not farmers or did not have cattle to do ranching. The few who got involved faced massive shortages of agricultural inputs during 1970s and 80s. They are still producing at essentially the same level of productivity as they did twenty years ago. However, this is a positive aspect for sustainable agriculture. The productivity fell because labour-reducing or productivity-enhancing technologies fell into disuse in recent years. For example, the fertiliser use fell from an average of 1.4 kg/ha in the 1960s to just 0.2kg/ha in 1990. Total annual expenditure on agricultural inputs (fertilisers, implements, and agricultural chemicals) averages only \$10-15 per smallholder household. In the survey carried out in 1989, it was found out that 16 per cent of the farmers interviewed had bought any fertiliser in the previous 5 years. While 65% of the farmers had applied chemicals at least once in the previous 5 years, only 36% owned a spray pump for application of agricultural chemicals. Even with such inputs like commercial (HYV) seed, only 62% had planted any HYV seed in the previous 5 years. Only 8% used commercial seed every season. What should not surprise us is that most farmers who used commercial seed were either producing cotton or vegetables for the market. Food production, on the whole, was dependent on the more sustainable traditional varieties produced from the farmers' retained seed.<sup>48</sup>

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<sup>48</sup> See J. C. Berthlemy and C. Morrison, *Agricultural Development in Africa and Supply of Manufactured Goods*, Paris: Development Centre of the Organisation of Economic Co-operation and Development, 1989.

Important conclusions of this survey are: Uganda's food production was guided by ecologically sound agriculture which did not use fertilisers and chemicals that spoil the environment, and research on improving seeds is advanced in the traditional cash crop sector. However, the latter conclusion has enabled Ugandan farmers not to subject themselves on annual purchases of improved seeds and the adverse consequences on reduced nutritional levels. One fundamental thing happened during the years of Amin's regime. Traditional cash crop production fell because the inputs which had accelerated their production were in short supply, and secondly, fetched low prices. Therefore, the rural economy shifted towards food production. This explains why during this long period of political chaos Uganda did not face severe famines. Further, it shows the autonomy of peasant producers. This is argued out clearly by Hyden's thesis that a peasant may appear 'small', but he/she is powerful and enjoys some degree of autonomy that enables him/her evade repressive government measures.<sup>49</sup>

When the peasant in Uganda realised that he/she was getting a small fraction of the proceeds from selling cotton and coffee, he/she concentrated on selling food crops. This, however, made the country food secure during the chaotic period, and forced the 'so-called' progressive farmers out of production, who, in most cases, were enjoying various types of subsidies from the state to increase their productivity. Moreover, these subsidies come in discrete units and their distribution is, often times, skewed toward the powerful segments of rural population whose loyalty and influence are most important in assuring future stability.<sup>50</sup>

Definitely, the farmers require agricultural inputs, but the institutions which are currently handling this role base their decisions on which inputs to import on recommendations by technical people rather than the effective demand of the farmers. As if this is not bad enough, the funds that are used for inputs' importation, are from donors, which, in most cases, are tied, limiting the range of inputs and restricting supply sources. Further, the donors follow international competitive bidding procedures which make heavy demands on scarce administrative skills. Thus, it takes a long period to go from needs identification to delivery of inputs. The farmers' needs are not, therefore, met in time.<sup>51</sup>

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<sup>49</sup> G. Hyden, Beyond Ujamaa in Tanzania: Underdevelopment and Uncaptured Peasantry, London, James Curry, 1980.

<sup>50</sup> R. J. Laker-Ojok, "Managing Input Supplies for Small Farmers in Uganda: A problem of Institutional Change" in P. Langseth et al. (eds.), Uganda: Landmarks in Rebuilding a Nation, Kampala: Fountain Publishers, 1995, p. 45.

<sup>51</sup> ibid., p. 46.

Zie Gariyo has studied Kibimba and Doho rice schemes, which were started by government to increase food production by using new technologies.<sup>52</sup> Both schemes have outgrowers, who have been given plots. The outgrowers are usually senior and middle members of management staff of the company. The pressure to demarcate some plots to some individuals was in response to a largely neglected state sector which fell prey to strategies for survival by a largely demoralised and apathetic sector.<sup>53</sup>

When these technologies were introduced they transformed the production and labour relations of the society. First, the construction of irrigation and water works brought about the economic utilisation on commercial scale, the areas formerly used for subsistence production. Secondly, irrigated agriculture has spread beyond the two official schemes with peasant cultivators taking it upon themselves to construct irrigation channels and reclaiming swamp land. These have changed the agronomic practices of the people and the productivity of agriculture within the area. Peasants have shifted from growing of cotton to rice because the former crop has suffered from poor marketing, and the co-operatives were not paying the farmers in time. Consequently, rice has replaced cotton as a major source of income. Because of this reason, more agriculturally and economically depressed lands previously marginally utilised have now been brought under intensive cultivation.<sup>54</sup>

Further, rice production has become a full time occupation at the expense of other food crops. This has led to a general problem of lack of food in the area. Farmers sell rice and buy other food crops from the neighbouring areas. Arising from increased incomes, farmers are marrying more wives as a source of labour and social prestige, and some families have bought the much needed bicycle. There is also an increase in the incidence of early marriages. More women are getting access to cash incomes, and the patriarchal tendencies are being challenged. The children are also being drawn into cash economy and missing going to school. It has also affected the availability of water and pasture for cows which are now restricted from entering the irrigation canals and rice fields. And, fishing which used to take place has since died off, thus, affecting the dietary nutritional levels of the people.<sup>55</sup>

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<sup>52</sup> Z. Gariyo, "Appropriate Technology, Productivity and Employment in Agriculture in Uganda", CBR Working Paper No.13, 1991.

<sup>53</sup> *ibid.*, p. 44.

<sup>54</sup> *ibid.*, p. 63-5.

<sup>55</sup> *ibid.*, p. 65-6.

Writing more on the negative effects of agricultural schemes in Africa, Gakou notes that they contribute to the breakage of 'extended' family network, which usually has a large common field where every individual from every household of the 'extended' family works. He attributes this to acquisition of better implements which rapidly lead to the spread of individual fields and the breaking away of households from 'extended' family. In sum, he makes these two conclusions: first, there is the retreat of the communal way of life and the tendency towards the break-up of the 'extended' family and peasant solidarity. Secondly, there is an acceleration of phenomena associated with the spread of capitalism leading to the deepening of social divisions among the peasants. This arises out of the fact that some peasants who are short of cash will sell their labour to those who have acquired mechanised plots to increase acreage.<sup>56</sup>

Due to mismanagement the schemes' output declined to the extent that they are now being sold to would be better managers. However, 'progressive' farmers, if well advised and given an enabling environment can individually or in partnership transform into large-scale farmers. An enabling environment includes political stability, improved banking sector, a liberalized economy whereby the market forces determine business transactions. Such an environment is useful to acquire all agricultural inputs on the market. However, for any project they have to undertake an environment impact assessment must be produced with regard to the inputs they want to use.

Mention should be given to investors who want to involve in commercial agriculture. The laws related to land should be enabling for investors, in order to acquire land for their projects. Uganda being of modified equatorial climate there are few chances of using irrigation in farming, and even when it is necessary it is not used extensively. Government's policy on investment is already good enough for the investors. Already with privatization, many government agricultural schemes and ranches could be sold to these investors whether foreign or non-foreign or in partnership to develop them on a large-scale. However, their activities should be limited to areas where they are non-competitive to small scale and medium-scale farmers.

## **Recognition of Women**

For the GR to succeed the role and status of women in agriculture must be recognised, because, they are the majority in the sector in Uganda. They participate in this sector in four different

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<sup>56</sup> M. L. Gakou, *op. cit.*, p. 50-1.

ways:

1. Responsibility for specific crops in which men do not have any share.
2. Women produce same crops as men but on the separate fields.
3. Women perform different tasks in the agricultural process, for example, sowing, weeding, and then harvesting.
4. Many farms (holdings) are run by women because senior male members of the family are absent as a result of divorce, death or short-and-long term migration to towns in search of better means of livelihood.

These patterns of women's participation should be kept in view when the package of green revolution is being implemented. Therefore, it is important that they receive their fair share of its inputs and services. Unless conscious efforts are made during implementation stage, women farmers are not likely to get their fair share. This happens because of the cultural, social, and economical barriers faced by women. Therefore, the following must be addressed:

1. ownership of land, livestock, or other assets which can be used as surety or a proof of their farming activities.
2. domestic responsibilities which limit women's participation in extension advice or training programmes.
3. cultural barriers which prohibit free interactions between persons of opposite sex.
4. low social and cultural status, which leads to under representation in beneficiary organizations and places women in a disadvantageous position when inputs and services are provided.
5. illiteracy and lack of education, which are likely to be proportionately greater for women than men.<sup>57</sup>

## **Conclusion**

What we have so far discussed shows that there is a new paradigm in agricultural development. The paradigm supports primacy in policy for local markets because the latter's development has positive effects for the poor and vulnerable in primary producer countries and because a close link between producers and consumers in a desirable characteristic of any well-

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<sup>57</sup> See Kate Young, Planning Development with Women in the Third World, London, Macmillan Press Ltd, pp. 31-66.

functioning market. This is possible when negative externalities of free trade are paid for by the enterprises producing them or trade is taxed to contain the externalities. An environmentally sustainable free trade policy recognises that taxes must be charged on the polluters-the polluter-pay principle. Many of these suggestions of sustainable agriculture fail because of the absence of active political front, notwithstanding greater strides in technology development. However, they challenge international consensus over trade, international institutions and economic principles underlying the international economy.

Sceptics are arguing the implementation of sustainable agriculture means zero economic growth. Little do these people know that its promotion will adequately feed the rising populations, and raise nutritional standards for most poor countries. As Shepherd argues, it will permit a pattern of savings, investment and distribution of income, which will help alleviate poverty and generate higher returns to labour at less cost to the environment and human health than available alternatives.<sup>58</sup>

Sustainable agriculture is also frequently defined as: ecologically sound, economically stable, socially just, humane and adaptable. It emphasises the protecting and developing of indigenous systems which remain ecologically sound, and linking these with markets in the South which recognise the quality of their products, as well as with such markets in the North.<sup>59</sup> Broadly, it is guided by three sets of principles, namely: the rejection of industrial production methods and the search for effective, productive and economic low external input systems; the greater involvement of farmers themselves and the cherishing and understanding of indigenous knowledge about agriculture and natural resource management; and the incorporation of active resource conservation firmly into a production framework.<sup>60</sup>

We should go for holistically derived knowledge, which can both be generated by science and farmers. The latter accumulate knowledge through experimentation and borrowing ideas. They also have a heritage of indigenous technical know-how. What is required is to use indigenous technical knowledge side by side with scientific one. Women are the main reservoir of indigenous knowledge, and everything should be done to capture it from them. Sustainable agriculture integrates conservation in all aspects of farm management. The processes involved are genetic conservation and

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<sup>58</sup> A. Shepherd, Sustainable Rural Development, p. 55.

<sup>59</sup> C. Reijntjes et al., Farming for the Future: An Introduction to Low-external Input and Sustainable Agriculture, London: Macmillan ILEIA, 1992, p. 2.

<sup>60</sup> A. Shepherd, op. cit., p. 43-4.

biodiversity, the conservation of soil life, and wildlife conservation. What we have so far discussed points to the three main principles, namely: participatory technology development, local institutional development in the control of natural and other resources, and interdisciplinary approaches to development work.<sup>61</sup>

Small farms have more labour at their disposal per hectare and sustainable agriculture is by nature labour-intensive, and these farmers have less or no capacity to operate GR technology, they will be the engine behind sustainable agriculture. This calls for organizations in 'developed' countries who are involved in promoting sustainably produced commodities, to work with NGOs and CBOs, who can guide them in social analysis. Sustainable agriculture wants to achieve ecological idealism. This is where production is meant for consumption in the first place. Secondly, for very local markets, and preferably not for exports, because as Shepherd argues, "export agriculture is naively understood to be against the interests of rural peoples' food security".<sup>62</sup> There is a strong argument to link sustainable agriculture to fair trade initiatives because the developmental principles embodied in fair trading practices nicely complement the ecological principles of sustainable agriculture.<sup>63</sup>

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<sup>61</sup> ibid., p. 46.

<sup>62</sup> ibid., p. 51.

<sup>63</sup> See M. Micheaud, "Fair Trade and Organic Agriculture", New Farmer and Grower, no. 47, 1995; Remigius Munyonyo, "Environmental Economics does not bring about Sustainable Development: A Call for Action", Nkozi: UMU Working Papers Vol. 1, No. 2, 1998; and Same author, "Radical De-Development Programmes with regard to Poverty and Population Growth: Their Impact to the Environment", Nkozi: UMU Working Papers Vol. 1, No. 8, 1998.