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PEASANT WOMEN'S ORGANIZATIONS AND LIBERATING RURAL TECHNOLOGY: THE CASE OF TANGA REGION, TANZANIA.

By
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1. Introduction

That the contribution of women to agricultural production in Africa is very high. The issue of contention here is the percentage of this contribution. In this regard it has been argued that there has been a persistence of statistical under-reporting arising from the fact that much of women's labour is invisible in the sense that it is not counted officially.

Despite variations, it has been argued that we can generalize that in Tanzania women do around 70% of hoeing and weeding, 60% of crop harvesting, 80% of portering of crops, 90% of crop processing, 60% of marketing of surplus, 95% of the care and feeding of the young and the aged, 90% of water and fuel portering, 50% of the seed/planting/cutting and 50% of care of domestic animals (Macha, Kerner, Minde and Msonganzila 1992 p. 77).

All this mean a very heavy work load for rural women which can reach as many as 16-17 hours of work in a 24 hours day. The main problem here is the inequitable division of labour, but also that of lack of access to technology which can reduce considerably the drudgery of work for rural women.

The objective of the research has been to look at the efforts of rural women to liberate themselves through rural technology. This objective has two facets, the first is to see whether rural women alleviate the drudgery of labour and improve their well being through the adoption of agricultural technology, especially intermediate technology. This involves both the choice of technology, especially animal power and the means of raising capital for such technology.

The second facet has been to examine as to how women, organized in their own technology application groups can contribute to their liberation *vis a vis* the traditional division of labour through breaking socio-economic barriers and gender inequality.

Often rural women are not organized. If there are problems of organizing peasants in general, then there are even greater ones when it comes to organizing rural women. Such efforts come against many barriers, among them the inertia of the existing patriarchal social system which often hinder women organization in many subtle ways.

It is however imperative that women should be organised in their own groups if gender relations are to improve. These groups and organisations not only play the role of forums for asserting their interests *vis a vis* oppressive gender relations but also act as important training forum for members as well as arenas in which women leadership can emerge. With time women became knowledgeable and experienced in running their own affairs. It was also our objective therefore to examine the performance of women clubs and organisations in these two facets.

2. Women, rural development and technology: some conceptual issues

a) Feminism and Gender

Gender, has been defined as socially constructed and culturally variable roles that women and men play in their daily lives. It refers to a structural relationship of inequality between men and women as manifested in labour markets, political structures as well as in the household. It is reinforced by custom, law and specific development policies. While sex is biological, gender is acquired and constructed (Meena 1992 p.1).

Such a comprehensive definition would seem adequate to identify the gender question and the need for action to redress the situation. Yet the interpretation of the problematic and consequently the strategies to deal with it has been a matter of controversy.

We would argue that some of the differences emanate from differences in the stages of development of societies, in class position of women involved and in cultures and religion. These differences affect the priorities identified by struggling women.

There are marked differences between the problems given priority by women from industrialized societies and those by women from underdeveloped areas. This appeared in forums which were preparing for the 1995 Beijing Women Conference and during the conference itself. The question of poverty plays a central role in gender relations in Africa. In African countries one has to attack poverty and gender inequalities simultaneously. In some cases the priority might be given to fighting poverty first.

Some industrialized countries have passed through that stage of mobilization for increased production capacity and have other priorities. In this context although rural intermediate technology has been surpassed in the industrialized countries it is crucial to African countries and can provide great service to rural women.

Despite the above differences there are great oppressions which affect all women. These range from underpayment in places of work, sexual harassment to naked

violence. The differences in priorities should not be used to argue as some people would do, on the futility of women struggles. The struggles of woman are necessary and real. What is needed is the analysis of the context of specific women struggles.

In our case it requires an analysis first of struggles of rural women in the African and Tanzanian context in general, to be able to place it in the perspective of the peasant women of Tanga Region, Tanzania, in her struggle to improve her life and her gender relations by acquiring new intermediate technology.

(b) Women and appropriate technology.

There is interactive relationship between technology transfer and gender which needs to be considered in the analysis of rural development.

According to Eva Rathgeber for most women in the world, technology has failed. Most of the technologies which have been developed have not been used or are used incorrectly. Thus the massive transfer of technology, both as artefact and as information, has often been accompanied by misuse, misallocation or misunderstanding in the recipient countries. (Rathgeber 1989 p.1)

The question which comes up is what has been the source of the problem affecting technology transfer?. Is it from the donor side or that of the recipient or both? Concerning the donors one can ask whether third world social reality has adequately been taken into account in technology transfer schemes. From the point of view of the recipient country one can ask whether important arrangements for dissemination of the technology and its maintenance have been taken into consideration.

The problems could also be at the level of the target group. One could ask whether local organizations have facilitated adoption and whether the people involved have taken seriously the technology which could improve their lives. In short the question is complex and instead of having one sided accusations one could try to see the constraints at all of the above levels.

One thing though about attempted technological transfer which is glaring, is that women have been left in the picture although in Africa agriculture, health and nutrition are largely the responsibility of women. Imperatively successful technology transfer in these fields would be those which empower women and strengthen their community.

Bryceson has defined technology as "Objects, techniques, skills and processes which facilitate human activity in terms of: first reducing human energy expenditure, second reducing labour time, third, improving spacial mobility and forth, alleviating material

uncertainty. Technology is expected to enhance human capabilities, not only physical and mental but also the social freedom for pursuing one's capacities (Bryceson 1985 pp.8-9).

The problematic here is that Africa is lagging behind in technology and hence the question of technological transfer becomes important and with it the questions of maintenance and operation control which can facilitate the institutionalization of such technology transfer.

A number of issues have been raised to illustrate the impediment to technological transfer. In the first place African governments and development agencies have treated technology as a neutral, value free tool. Consequently technology to be transferred has been taken out of the context from which it came out and from the socio - economic context in which it is to be introduced. Another issue concerns the questions of the economical feasibility of technology and as to who decides on whether the technology is appropriate and to whose interest. In the third place, policies have ignored women's relationship with technology. Often women are regarded as welfare subjects recipients of social services projects and not central to the economy. There is insensitivity to possible change in gender relations following the introduction of new technology, for example loss of control by women to their husbands of their labour.

Early object failure of technological transfer to Africa and other third world countries led to the development of the concept of appropriate technology. Patricia Stamp has argued that although it is an improvement over earlier approaches, evaluations of appropriate technology programs reveal that many projects do not achieve their objectives. Value judgements by development planners have undermined the effectiveness of appropriate technology (Stamps 1989 p.57).

It is not that there is no possibility of having appropriate technology only some fundamental questions including epistemological ones need to be raised. The question is not just as to how to fix the appropriate technology, rather why should it be seen as the most effective and acceptable technology in a given social, economic and ecological context.

Bryceson has argued that there is a wide array of technological devices that could reduce women's labour intensive activities. The activities include, in the first place transformation work especially for domestic labour. Gadgets here include grinders, graters, oil extraction tools, improved stoves, solar cookers, low cost refrigeration etc. In the second place it involves pumps for water purposes and thirdly it involves transport devices such as carts and wheelbarrows. She argues however that these

items have met with less than hoped for success because of limited dissemination, limited access, or poor design (Bryceson 1985).

Such failures have raised doubts about the appropriateness of "appropriate technology". Stamps has argued the case for "improved village technology" as opposed to "appropriate technology". The former is a conservative notion in that it does not intend to introduce changes into the environment or the socio and cultural order. Instead it should provide a solution to a felt need, should depend predominantly on locally available skills, materials, should be affordable and culturally and socially acceptable to the community. An improved technology could also allow a traditional task to be performed better or enhance the use of existing technology.

The "improved village technology" raises important issues. Very crucial in our opinion is that of socio-cultural order which would determine the felt needs of the society. This is the distinction between the quest for modernity and that for modernization. The first searching for development within the framework of the culture of a particular society the second wishing to transform it, to make it part of the "global village".

The use of available skills and materials wherever possible is quite useful yet it has to be recognized that many African societies need new input in terms of technology and skills. This arises not because of the necessity to catch with the Western countries but because of the need to address serious bottlenecks facing these societies. Some of these bottlenecks arose because of the interaction with advanced capitalist countries. The environmental problems following the introduction of export crops is a case in point. Before the entry of colonialism many African countries had developed agricultural systems even though at a low level of development. In the words of Rutherford they had developed optimum solutions to existing situation, which however becomes inadequate with incoming changes. This system moved from dynamism to inertia and finally to decline (Rutherford 1985 pp. 11-12).

In that context we believe it is still important to pursue appropriate technology although the existing constraints have to be addressed. Stamps has argued that reasons for the failure of appropriate technology programs must be sought in factors other than women's low productivity and lack of access. She says that we should start from the reasonable assumption that women are refusing to accept or sustain appropriate technology on sound reasons rather than out of "backwardness" or ignorance. In many projects, technology for the benefit of women has been co-operated by men for their use, for example carts for carrying water and firewood.

Appropriate technology has faced many impediments preventing acceptance especially by women. In the first place the quality of products may be compromised, for example

processed food. In the second place traditional technological processes may be lost. Thirdly some equipment requires some women to assume immodest body postures not acceptable in certain societies.

Fourthly new technology may have drastic impact on existing work pattern. Fifthly expenditure on energy might be high, for example foot pumping and in the sixth place the technology might require organization of tasks that do not exist in the community (Stamps 1989 p. 57).

These problems mean that what is appropriate technology has to be determined in every society. Some blue prints might work in a variety of societies but in many there are no readily available blue prints. These have to be developed for specific cases or have to be modified to fit specific cases. In that case the role of local industries to develop able prints or modify them is important.

As for feasibility studies before the introduction of appropriate technology, they need not concentrate only on economic variables, but to give equal weigh to social feasibility. That is the possibility of acceptance, but also as to how the position of women would be affected in the whole process.

(3) The rural technology problematic in Tanzania

Before we come to the discussion of rural technology in relation to the needs of women and *vis a vis* gender relations it is imperative that we put it in the context of the rural technology problematic in Tanzania. This would help us understand the general constraints as well as possibilities. In other words to enable us understand when we come to assess the performance of women groups as to which constraints fall within the general technological context and which are due to gender relations.

The rural technology problematic involves a low level of technology and skills. Solutions are difficult because imported technology is expensive and many rural societies are not capable of managing and controlling it. In Tanzania this problematic is illustrated by difficulty in the implementation of different government policies on rural technology (mechanization and better means of production).

The first policy on the matter after Tanzania's Independence in 1961 is found in the first five year plan of 1963-1968. This policy was in favour of tractors. Peasants were organized in Settlement Schemes and were made to use tractors and other sophisticated machinery, including such machines as tree pluckers. This strategy was a failure as the machines were too expensive to maintain and the agricultural production too small to cover the running costs.

There were also tractor renting programmes especially in the cotton growing zones of Mwanza and Shinyanga. The programmes were financed by the Regional Development Fund. The programmes depended on government subsidies and often peasants did not pay for services offered on credit. A government report of 1968 stated that no repair on the organizational structure of the programme could make them work (Tibaijuka 1988 p. 42.).

The second five year plan 1968-1973 envisaged to promote the use of ploughs pulled by drought animals. In reality however there were very limited specific efforts to popularize this technology. With the exception of Regions which had started using the technology since the time of colonialism, that is Mwanza, Tabora, Shinyanga, Iringa, Rukwa and Singida, the other 14 Regions of the country were largely left out. However even for these pioneer Regions the implements used were mainly ploughs. There were no concerted efforts to popularise other animal drawn farm implements. Dumont observed for example, when he visited the Region of Rukwa that ox carts were hardly seen (R. Dumont 1980 p. 174).

The preference given to the use of tractors has continued over the years. Thus during the policy of socialism and rural development, those villages which had won annual development competitions were awarded tractors as prizes. This policy was only limited by the small capacity of the government to get foreign exchange to import new tractors and spare parts for those already in place.

Agriculture programmes and state farms use a lot of agricultural machines. It was the case for example of the Mbalali State Rice Farm, which had a tractor for every 300 hectares (Dumont 1980 p. 168). This is an excessive presence of costly machines. The consequence of a policy favouring tractors was that there was under investment in alternative agricultural implements. The result has been that most of the peasants in Tanzania use hand implements for agricultural activities when alternative implements, especially those linked to draught animals, could have been more efficient.

Agriculture in Tanzania is thus dominated by hand tools. Around 80% of cultivation is done with hand tools, 15% by animal drawn implements and 5% by tractors (Kjaerby 1989). If we compare with Zimbabwe we find that in that country all cultivation is done by either animal drawn implements or by tractors.

A typical Tanzanian peasant would have 2-3 big hoes, one axe, 1-2 bush knives, all these produced at the local Ubungo Farm Implements (UFI) or imported. They would also have several pruning or harvesting knives, often produced locally. This shows the low level of agricultural technology in Tanzania.

According to Kjaerby, a strategy based on widespread use of tractors in Tanzania can't be effective in Tanzania where there are even shortages of hand implements. He proposes therefore as an immediate move, the assurance of the distribution of hand implements and then as an intermediate strategy the encouragement of the use of draught animal implements (Kjaerby et al 1989 p. 13).

The constant devaluation of the Tanzanian shilling since the IMF agreement of 1986 means that tractors are becoming constantly out of the reach of most peasants. The ever increasing costs of spare parts, fuel and maintenance have increased the prices for renting privately owned tractors. In Tanga region the prices for cultivating a hectare have increased from 500/= in 1985 to 5000/= in 1991 and 10000/= in 1994. Often renting a tractor is unprofitable for a small holder because of low agricultural crops prices.

The question which comes up here is whether the Tanzanian State was ready to draw a strategy of agricultural mechanization based on draught animal pulled implements. After all this technology is already well established in the Regions of Shinyanga, Mwanza, Singida and Rukwa where the experience had started in the 1930s, especially in the cotton growing areas.

In these areas the most widespread implement is a one share plough. There were around 180,000 ploughs in Tanzania in 1989. The carts were rarer, found mostly among rich peasants. It is the case with other animal pulled implements for example there were 757 cultivators, 340 in Shinyanga region, 236 in Tabora, 58 in Mbeya and 23 in Singida (Kjaerby 1989 p. 24-26, p. 48). This means that even in these Regions animal drawn implements have not been used extensively.

In Tanga region the technology was introduced by a project which started under the auspices of the Tanga Integrated Rural Development Programme (TIRDEP), a programme which started in 1975 based on the concept of integrated rural development. The Draught Animal Project (DAP) was established in 1981.

The main objective of DAP when it was established was to introduce intermediate rural technology in a situation where the hand hoe was prevalent and where tractor services were too expensive for the average peasant. When the project started progress was slow and it took some convincing before peasants started to adopt it in considerable numbers.

Table 1: The Adoption of Draught Animal Power in Tanga Region.

Year	District						Total
	Handeni	Korogwe	Lushoto	Muheza	Pangani	Tanga	
1983	-	1	-	2	-	-	3
1984	-	1	-	-	-	1	2
1985	1	22	-	2	-	2	27
1986	-	4	-	1	1	-	5
1987	-	-	-	5	-	-	5
1988	8	12	-	5	-	4	29
1989	13	18	8	10	-	17	67
1990	22	11	9	24	6	9	80
Total	44	69	17	49	6	33	218
Dropped	7	27	-	16	3	4	57

Source: The Tanga Draught Animal Project-Impact Survey November 1990.

Since the beginning of the programme in 1984 up to November 1990, 275 peasants had been trained in the animal traction techniques.

4. Women Rural Technology and Empowerment in Tanga Region

a. Establishing Women Organizations in Tanga Region

Often it has been argued that women groups fail because of being established from above. The problem however is to have spontaneous women groups organized from below. The problem is even more compounded when it comes to peasant women just as it concerns peasants in general.

Investigating women organizations in Kilimanjaro, Von Bulow noted that women are increasingly forced to organize in registered groups in order to get access to productive resources, training, loans and other assistance for government bodies, loan institutions, NGOs and donor agencies. In this regard she distinguished registered and non registered women groups.

Registered groups often represented rich and middle level women married to prominent and influential men. Typical projects by these groups included dairy, animal feed, piggeries, sunflower oil, gardening, grinding machines, beer brewing, tailoring, trading in second hand clothing and the running of tea rooms.

At the sametime groups from villages of prominent political leaders or top civil servants stood a better chance of attracting donors or sponsors. Another batch of groups arose as a response to a special loan to women created by the National Bank of Commerce (NBC) in 1991. (von Bulow 1993 p. 3).

The results were far from encouraging. Despite quite favourable market conditions, comparatively easy access to donors and local private sponsors, many registered women groups did not seem to fare well. One could mention a number of real problems affecting the groups such as lack in management and accounting skills, transport problems and lack of sufficient investigations into market possibilities. Yet critical in this instance is the use of extra economic rationality which is present not only in women groups but with other traders. This takes the form of using political power or government position or resources to run businesses which would otherwise not be feasible. Free capital and other facilities would cushion loss making projects, at least temporary, until it becomes clear that they are unsustainable. At such a stage the project would collapse because afterall someone has to pay the bill.

A look at non registered groups showed another picture. These groups included what are known as "kibati" groups. These are low income women raising small capital from rotating contributions or private petty loans. Despite the small capital base they had shown success both in terms of raising the level of life for the women involved but also in women empowerment as they learn to make independent decisions.

The qualitative differences between high income and low income women which led to many complaints by women when the NBC loans went to wives of well placed people instead of those who not only needed them badly but also had the capacity to use them effectively. Infact the rich were taking the loans knowing that they would use their influence to avoid repayment.

The women groups in Tanga had the disadvantage of starting from above, in that the suggestions for their formation first came from donors running DAP and UNIFERM. It should be noted however that these groups are involved in production and running their own businesses. They are also not receiving free capital and they know that they have to pay back. Certainly there would be those who because of laxity in management would get losses and it would cost them dearly, but at least they did not enter the business in an opportunistic manner, in order to take advantage of free capital.

It is with that background that we can evaluate the performance of women groups in Tanga in terms of improving the conditions under which they are working, improving their lives as well as enhancing their decision making powers and independence.

The idea of DAP involving women as a special group needing particular attention came when it was realized that although women had shown much interest in the activities of the project, they had important constraints. Some of these women were heads of households and were in dire need for the technology in order to solve important labour bottlenecks. These women usually had to make extra-ordinary efforts to buy their implements and at times they had problems in getting draught animals, having to borrow the animals from neighbours, a practice which was unreliable.

For widows, even when their husbands had left behind animals they could not fully control them. In most Tanga societies decisions concerning the animals would rest with the men in her husband's clan. Decisions to sell or slaughter an animal would have to be made by male members of the clan. This is important for draught animals because there is a myth among many peasants that once an animal had been used for tilling it was not fit for consumption.

The aim therefore was to assist such women to get some credit to get trained. At the same time dealing with them directly was a way of enhancing their status as independent decision makers in their societies. The idea was also to encourage married women to organize as groups. Within the household they were unlikely to make the final decisions. When they have their own groups they can make collective decisions without their husbands. At the same time, while it might be difficult for a husband to agree to a huge investment on technology, it would be easier for him to pay for modest contributions for women groups implements.

The women groups thus started in 1992 when DAP had already established itself. By August 7th 1994 out of the 402 peasants involved in DAP, 98 were women. Before January 1994 the number of women was 87. There was therefore an increase of 11 in the six months. Women clubs run concurrently with wider DAP clubs and women clubs collaborate with the general ones. The general clubs were established by DAP in anticipation of the withdrawal of the German donors from the funding and management of the project.

The idea was to prepare organized farmers using the technology to run their affairs because the official technological network was inefficient and largely inadequate. The extension services in the Department of Agriculture in the District, which has a specially trained unit on the technology, would provide advisory services to these clubs. This unit would also coordinate the supply of implements at a cost.

At present the clubs run all the services which were previously run by DAP with the exception of extension. These services include the purchase of agricultural implements and spare parts and the training of new members and their draught animals. The

clubs are also the base for the mobilization of capital and credit and also for passing extension messages such as mixed agriculture and environmental control.

As for women, apart from the general activities, their clubs are expected to mobilize more women, help them act as a group through which credit can be channelled. Their clubs are also expected to assist them to own land either through purchase or through allocation by village governments. In that way some groups have collective farms. These farms however are small and land ownership by women remains a thorny issue in the Region.

The other project, UNIFERM, with the assistance of Holland and Sweden is attempting to meet capital bottlenecks for rural women. Unlike DAP which concentrates on animal drawn technology, UNIFERM has a wide range of women activities in mind. It is the recipient of the credit who is expected to have the initial idea, after which UNIFERM project officers would assist the potential recipient women to draw up a feasible project which, if accepted, would be financed.

The groups which have adopted the technology have different characteristics despite being in the same Region. The objectives for adopting the technology have consequently been different. These characteristics also have impact on gender relations and the possibility and extent of their change.

These groups at times fall within distinct sub-cultures. These occur even within a district. Sometimes these groups coincide with tribes (Wadigo in Muheza) but also with occupation (pastoralists and agriculturalists) and on ideological lines (remnants of "Ujamaa villages" or socialist villages). Apart from these sub-cultures we have adopters who have more universalistic characteristics. In such situations individual characteristics based on the household play a significant role. That is the individual relationship between a husband and a wife becomes the basis for participation or non participation of the women in gender groups.

In Korogwe district two groups are prominent, one in the area of Kwashemshi and another is located at Magamba Kwalukonge, once a famous "Ujamaa Village". Kwashemshi, which is at the foot of the central Usambara mountains has a sisal plantation which used to employ many workers but which at present employs very few workers who are often not paid in time. There are many reasons for it, among them low sisal prices in the world market and local mismanagement of the plantation.

Consequently the Kwashemshi group is largely made up of wives of underpaid sisal workers, teachers and wives of primary school teachers. Their aim being to supplement inadequate salaries by agricultural activities and income from renting out ox drawn carts. Initial capital for most participants include contributions from husbands.

The women group at Magamba Kwalukonge is a product of one of the most successful "Ujamaa" villages in the country. Although the village is no longer considered an "Ujamaa" village after the end of official socialism in Tanzania, some members of the village run a very successful cooperative along socialist principles. These work collectively and earn monthly salaries on the basis of "to each according to hi/her contribution."²²

The Ujamaa monopoly which existed when the official policy was socialism has ended, as now there are a variety of groups and there is freedom of choice as to what one wants to do. The spirit of cooperative has however survived, everyone in the village seems active doing purposeful activities with a level of seriousness lacking in neighboring villages. In such a situation women as a group have confidence in their dealing with men not easily found elsewhere. Their participation in village leadership for a long time has helped in building respect for them among village members.

The women group benefited from their experiences in the village cooperative which had adopted Draught Animal Power since 1987 to supplement the services of its 3 tractors. The women group started in 1988 with 10 women as members. The women have their own activities and have their own account. They however cooperate with the bigger groups which involve men.

Mnazi, a lowland Division in a largely mountaneous District of Lushoto has two groups. One is at Mkundi which has 7 women and 5 men. The Chairperson of this group (CHAWAKA - MKUNDI) is a women, whose struggles will deserve a further mention when we discuss gender relations. The other group is the Langoni Women Group, situated at Langoni village. It started as a group of 12 but was reduced to a half as other women failed to pay their contributions to the purchase of donkeys and implements. The credit was supposed to follow only after the purchase of a pair of donkeys and a cart. The donkeys were being sold at Tshs 12000 each while a cart had a price of Tsh. 47,000. It is evident that some husbands were not assisting their wives who wanted to join this group.

The people who leave in Mnazi division are Shambaa, who are both agriculturalists and pastoralists, and the Maasai who are purely pastoralists. Some Maasai joined the Mkundi group in the initial stage, but after training their animals on how to carry carts, they withdrew. Since they are not agriculturalists, they did not need the services of the agricultural implements.

The Mkundi group operates individually and collectively. Of the 7 women, 4 have each their own implements own implements while 3 share the same implements. The

group also has a 2 hectare collective maize farm. At the same time since the implements owned are not uniform, members of the group lend each other the implements in order to be able to cover bottlenecks in agricultural activities.

In Muheza district the areas which have DAP projects are Duga Maforoni and Maramba. At Duga Maforoni, the people involved are the Digo, people living in a fertile area near the coast.

In the Ward there are around 20 farmers using the implements and the women make part of the group, their own group is only in the making and is not yet established. The activities here started in 1991 after being incited by DAP. One of the earliest adopters was a man who had lived and worked in neighbouring Kenya where he saw the technology. He is now considered a successful farmer and has trained his wives to farm with the technology and has encouraged others to join.

This is a group which is big in numbers but not very active and cohesive. The women are only loosely organized yet those who have adopted the technology in this area are still better off than the rest of the population.

The group in Maramba - Mazizini is made up of people who migrated into the area to take advantage of fertile land which was underutilized. The people who have adopted the technology are from the Pare tribe which originated from the Region of Kilimanjaro. These had not migrated to the area directly from Kilimanjaro, they had firstly settled in the region of Morogoro before learning of the fertility and relative openness of Maramba area.

These people moved into the area in 1986 and started joining the DAP project in 1992. They are pastoralists/agriculturalists who moved with their cattle from Kilimanjaro to Morogoro and then to Maramba.

While these people were adopting the technology the local people were accusing them of torturing their animals. The women in this group are active participants in the activities but they are not organized separately from the men. They have stated however that they intend to establish their own group and that 5 women have indicated their willingness to form that group.

Handeni district has two groups one of them with around 15 women from the Maasai tribe who are essentially pastoralists. The Maasai women use carts for carrying produce to and from the market, but more specifically for carrying water which has to be obtained from long distances. Another group involves mainly women farmers who migrated from Moshi, in Kilimanjaro Region which has land shortage and poor peasants are marginalized. These moved to Handeni where there was ample land.

Often women came with their husbands some of whom were working in government offices in town. These are hardworking women who had adopted the technology easily because the technology was in use in their region of origin.

The UNIFERM women recipient of credit do not form a cohesive group. Although they often meet in seminars their solidarity is limited. This is partly because unlike those in DAP these women are involved in different economic activities.

(b) Utility of Rural Technology to Tanga Women

An analysis of women and rural technology in Tanga can be done at two levels. The first level concerns the relevance and utility of that technology to women. The second level is the gender issue, that is in what ways is the technology improving on the gender relations through the increased empowerment of women. Both levels are important because the African woman has to fight against both poverty and gender oppression.

The first level deals with the struggle against poverty and backwardness. In this regard the first question which arises concerns the relevance of DAP technology to women. That is in what ways is the technology concretely improving the means of living of women and their families.

We can discuss the relevance of the technology along the three technological categories mentioned above. That is the categories of production technology, process technology and time and energy sapping reducing technology. The technologies involved in DAP are relevant to women in general and specific senses.

The DAP technology concerning production include the activities of ploughing, harrowing, planting and weeding. Not all peasants involved have all the implements. The use of animals means that these tasks are eased and allow for the cultivation of larger plots.

With the implements the women still work hard but at least with the animals some of the drudgery of the labour is reduced. At the same time by increasing the acreage under cultivation women are able to increase yield, which goes to the greater satisfaction of family needs.

If we start with DAP groups we find that on the whole the technology has shown much utility in the Region. The challenge which still remains is whether it will be institutionalized and become part of the "rural furniture". The question of institutionalization is important in that it implies complete independence in the economic running of the technology without donor assistance.

Those within the project understand that they have to run their own implements and pay for them, although one would still meet those who could not understand why the implements and their spares are not supplied to them at their homes where they would just pay for them.

The group at Kwashemshi usually uses the technology for ploughing and they have carts for transport. During the agricultural season they have been able to cultivate maize and beans plots. The harvests have supplemented their meagre salaries and those of their husbands.

At the same time they have hired out their animals and implements. They have been paid in cash or in kind after harvest in the cases where peasants could not pay in cash. This group has also participated in using their oxen and donkey pulled carts during road repairs under the rural road betterment programme. They earned money using the rates shown below.

Table 2: Rates for renting a cart for rural road maintenance.

Distance	Price round trip	Number of trips per day
0-500m.	Tshs. 125	20
500-1000	150	15
1000-1500	175	10

Problems which have been identified by members here are shortages of people who could be used as helping hands, especially "drivers" of animals with implements. This often affects women who are salaried workers or those without grown up sons. Often hired hands do not stay for long, deciding to seek employment in towns. This is a trend in rural Tanzania where young people often do not see career in agriculture and in the village; they migrate leaving the old and very young in the villages.

The women of Magamba Kwalukonge have a wide range of implements which they use for cultivation, planting and weeding. They started with a loan from TIRDEP which they have already paid back. They also have carts for transportation especially during harvesting where they carry produce from farm to homes and markets. They charge other farmers who want their services. The price is TShs. 1,500 per trip for a far away plot and between TShs. 500 and 800 for plots which are nearer the village.

The introduction of the technology has greatly improved the lives of the group at Mnazi - Mkundi. Some women started very poorly and have now high esteem in the

society, being quite well to do with several pairs of animals and some have opened business such as shops.

Non members have benefited from hiring the implements. Members of the group however have an advantage because during times of labour bottlenecks they give priority to their farmwork or those of fellow members.

The Mnazi - Langoni group in the next village has not fared well partly because some husbands are not assisting their wives in paying for contributions but also because of poor leadership and mobilization efforts. It has few implements and animals.

Apart from draught animal activities this group had also received 2 sewing machines as assistance from FINIDA, the Finnish development agency. These machines have not been used effectively. Despite getting a tender to supply uniforms to the primary school at Langoni this group has not been able to take advantage of it. The chairperson explained that they had no capital for purchase of clothing material. In short after having obtained free sewing machines they expect someone to provide them with capital to purchase the material, a dependency which compares badly with the energetic Mkundi group just a village away.

The group at Duga Maforoni has adopted the technology but the performance is also not very high except on the farm of the man mentioned above. His farm stands out when compared to others in the village. He has encouraged women to adopt technology but essentially as wives who assist their husbands.

When one looks at the group at Maramba Mazizini one notices that the technology has made the group more prosperous than the local people. While these people were adopting the technology the local people were interested in maintaining their cattle only as savings in the case of famine when they would sell a few. They use the carts for carrying water which is drawn from a distance and also for carrying their produce from their farms. They also carry compost manure to the farms.

The adoption of this technology is making this group distinct from the local people. Certainly these people having originated from the arid and population dense parts of Same, Kilimanjaro understand the value of land. Without the carts to carry water, firewood and produce the lives of the women would have been very difficult for in this group the man is still very powerful and women would still have been doing these tasks.

In Handeni area the Maasai have used the animal drawn carts for transporting firewood and water which is collected from long distances to their homes as well as produce to the market. Unlike the Maasai in Mnazi area a few of the Maasai in Handeni are using animal drawn implements for cultivation. This is rare among these pastoralists who mainly eat meat and drink milk and use very limited amounts of starch.

Generally the introduction of DAP technology has improved the performance of agricultural work and the transport of inputs and farm produce to the homes and the market. The ox and donkey carts are also providing for other essential household needs such as water which on the whole it is a woman's task in the Region.

When a sample of women were asked their position on the technology most believed that it had given them much benefit. When asked on what have been the benefits of the technology many stated that they have earned more money and improved their living.

Table 3: Benefits of Intermediate Technology

Reasons	No. of Respondents	Percent
1. Has increased earning and improved life	32	66.7
2. Have been able to expand farm	31	64.6
3. Have expanded to other activities	24	25.0
4. Have established business	12	50.0
5. No benefits	5	10.4

The total number of controlled respondents were 48. The questions allowed for multiple responses. The percent is thus out of 48, the total number of respondents considering the actual number of peasants and women who have adopted the technology which is less than the anticipated this represent a significant sample of that population. Most of these respondents also stated that the technology has increased their efficiency. They have been able to produce more with less efforts and that the technology has reduced the drudgery of labour.

Table 4: Opinions on the Efficiency of Intermediate Technology.

	No. of Respondents	Percent
1. Have been able to produce more with less effort	37	77.1
2. Reduced drudgery of labour	36	75.0
3. Increased only slightly	4	8.3

Those who managed to increase efficiency only slightly were faced with problems of managing the effective use of the technology. It concerned mainly those in the UNIFERM programme. The other problem here has been labour bottlenecks, for example failing to get someone to drive the animals, meaning that the animals and implements remained idle.

The challenge of this technology is whether it can continue to spread and whether it can be institutionalized in the Tanga Region countryside. In that regard the next few years would be critical for that possibility because DAP farmers would be operating without donor support.

The situation with UNIFERM has been different as regards rural technology. The project takes pride in the fact that the payback rate by women recipients of credit is very high. This is a mark of success compared to many credit programmes where peasants who had been given credit never paid back. This aspect in UNIFERM however at times hides the fact that sometimes the women have to pay from other sources and not from the project for which they received the credit.

While the trading aspects of UNIFERM have shown some success those falling within rural technology are impressive, with the exception of maize flour mills. The grain milling machines have been relatively popularized in the region. They have over the years eased the tasks of women, whom in the old days had to spend hours pounding in order to get flour. The pounding is continuing in some parts but this is more so because of the long distances one has to travel to get to the location of the milling machines. The increase of milling machines has thus the advantage of ensuring that women will walk less distances to where the milling machines are located.

The introduction of oil extraction technology has not been impressive. The pressing machines given to women on credit have been a great liability to them. The machines were loaned to women in 1993 costing Tshs 45500 (app. US\$ 100).

This crude machine is produced by the Centre for Agricultural Mechanization and Rural Technology (CAMARTEC), a highly bureaucratic and inefficient agricultural

machines producing institution situated near Arusha. Despite efforts to train the women on its use the machine is still difficult to operate and it is inefficient in producing the oil. As the women put it, "the machine was stealing their oil".

The poor women are paying the loan advanced, not from the sales of oil extracted from the machine but from money obtained from their farms. The loan record books would show an impressive loan repayment rate from the women, but to them it was a total loss and they have to pay their obligations from other sources. They are worse off than when they started.

It is a very unfortunate situation whereby a programme is dumping crude and ill conceived technology on unsuspecting women. It was produced when the country had a shortage of cooking oil. At present there is plenty of cheap cooking oil imports, as well as local factory produced cooking oil. Such crude technology is therefore unnecessary.

If UNIFERM is to really help women it should not judge success only by the repayment rate, it should take more time in the identification and selection of technology to propose to peasant women. They also need to provide adequate technological extension to solve technical problems. This could go with more training for the recipients.

(c) The Impact of Rural Technology on gender relations.

We have sought to argue in the preceding section, that the intermediate technology, especially that introduced by DAP has improved the welfare of women. In many instances it has eased their burden in production, food processing and in transportation, whether of produce or of water. The question which arises in addition is whether the technology has changed the existing gender relations. Whether the technology has increased control and power of women in the existing socio-economic relations.

In this section we therefore discuss the type of gender relations brought about or reinforced by new rural technology. We will seek to present the views expressed by women on their relations with men. We have however also to rely on our observations of the existing relations. Some gender inequalities are so well entrenched that many peasant women consider them as normal.

Assistance by men could imply a subtle attempt to use women for their own benefit. At the same time women might know of this subtlety but then they weigh the costs and benefits and would adopt the technology all the same. That would be in most cases a sane decision because the adoption and institutionalization of the technology

is a critical first step. The struggles to improve gender relations can be a long drawn battle.

Opinion of women concerning relationship with men showed overwhelming good relationships. Even further producing and asking them to look at the relationship in a wider context did not affect the opinion significantly.

The majority of women in the groups stated that they did not get opposition from their husbands and some assisted them. For the unmarried and divorced, the man's position in the household is held by the father.

Table 5: Opinion on the role of husbands/father on adoption of technology

	No. of Respondents	Percent
No. opposition	36	75
Opposition	12	25

One of the twelve put her case very strongly arguing solemnly that always men wanted to reduce the development of women. That whatever they said their aim is to maintain a woman in a subservient position.

As to whether there has been opposition from other men apart from their husbands again the majority did not see problems there. The intention of the question was to see whether at the village level, including leadership, there have been barriers facing women in the adoption of the intermediate technology.

Table 6: Opinion on whether men have created barriers for women to adopt technology

Value	Frequency	Percent
Men have discouraged women	15	31.2
No problems from men	33	68.8

The responses show that the women felt that they had not received systematic barriers from men in their villages.

A further question prodded as to how would the women describe their relationship with men in general. The responses again showed that by and large, their relationship was good.

Table 7: Relationship with men

Value	Frequency	Percent
1. Good	40	83.3
2. Some men create problems	8	16.7

From the opinion one could deduce that the gender relations are good. In order however to discern gender relations in the rural areas, this alone is inadequate. A lot of women would consider their position concerning certain aspects of the society as part of their culture and hence would not see some of the oppressions as abnormal. Few rural women would expect their husbands to fetch water or to cook food for the family. These would be the obvious examples but then there are even more subtle cultural bound tasks which often work against them. In that case there is a marked difference between the rural women and the urban women on women liberation.

We can raise some of the gender issues by highlighting some experiences. The first subtle means of exploiting the women involves some people who have the capital to purchase the implements for their wives. It was the case with some traders and some employed husbands.

This apparently was to enable the women to earn independent income. In reality however, more often from the talk with the women. It meant that they were doing so to avoid their responsibility to the home. As the woman was producing food and income, she would have all the responsibilities of feeding the family, clothing the children and sending them to school. This was prevalent in Korogwe district.

Some intendant traders supported their wives in the purchase of implements but then this is an area where traders with only modest incomes are considered well to do and often become polygamous. They usually have several homes which could be miles apart, including at times an urban wife. After the initial "investment" the women fend for themselves and their children and the man shows up periodically. The society sees this as normal and the man would claim to take care of several wives while in fact it is them who are taking care of him, his children and his ego. A divorce would make the woman loose what she had built with her sweat.

A similar trend was noticed in Handeni with farmers who had migrated from Moshi area of Kilimanjaro. These are essentially monogamous people, and when the husband is around they work together. They have however moved in with cultural traits which marginalise women as property owners. This includes also absentee husbands.

This is a tendency for husbands working in the urban areas to leave their wives in the villages to take care of farm plots.

In that regard the cases above show that the technology has not changed for the better the gender relations. In fact they have strengthened the power of the husband. The women might realize it but culturally bound roles seem crushing to them. They seem to take consolation in struggling for their children and the fact that the technology has reduced the precarious nature of their subsistence.

There were other situations where men were anxious to teach their wives the new technology, so that they could work more effectively on the farm. With the increased revenue from the farm they would however marry a younger wife.

Women have more say when it comes to their own groups and activities. In such cases most stated that they decided on how to use their income, alone or after discussion with their husbands.

Table 9: Who decides on how to use the income obtained from groups.

Value	Frequency	Percent
1. Herself	31	64.6
2. Husband/father	13	27.1
3. Both her/husband	4	8.3

The cases of divorced women and those who have separated from their husbands or of single women involve bigger struggles. These societies often marginalize this group and success depends on support of a father or a "benevolent" brother after the death of the father.

In most of Tanga Region when a woman is divorced she goes back to her family which is supposed to allocate some land to her. The women however use the land but do not own it. It belongs to the men in the family and she does not inherit land from the father. The death of the father puts these women in a precarious position as the brothers would be fighting for that land and would parcel the whole of it. The sister is often marginalized in that process. Many women would suffer from harsh husbands especially when they have children rather than return home to this marginalization.

Even in "benevolent" cases the marginalization is not far off. An example is a case of a divorced young lady who was assisted by her father to enter into the project. She has freedom to use her money and she has a prospering shop, except when it comes to buying land. She has to seek her father's permission and buy it in his name. This is risky because women in the area do not inherit family land, in the event of demise of her father there is a likelihood her land would go to her brothers. When asked about that possibility she said she trusted the father and that her brothers would not take her land. The land could have been in her name but then the society does not expect a women to own land.

Those who are divorced and with no fathers to assist them the battle is often insurmountable, and one needed extraordinary efforts to succeed. The case of the chairperson of Mnazi - Mkundi is telling. After being divorced by a man employed in town she settled and started selling local beer in the village Mnazi - Mkundi. It is an activity of low esteem in the village. When the DAP project came along she wanted to join in but then she had no donkeys. She took all her meagre savings to purchase a plough after a neighbour, a man, had promised to lend her a pair of donkeys. This was done but after she had trained the donkeys and started using them in her farm, the owner took them, out of jealousy.

It was an uphill task for her as she had to sell everything she had to purchase a donkey. She persevered and prospered and now has several pairs and some carts which are doing hefty business. Her sons have since joined her and are the ones driving the donkeys. She even paid the dowry for her son to marry a young woman to encourage him to stay around and create a family.

Interestingly though she has allowed her boys to go and fetch up the father who had divorced her and who had lost his job and was destitute in town. When asked as to why she did so, she stated that she was afraid her boy could have followed him in town and without them she would have not only problems of manpower but also she would be vulnerable in the society which did not respect single women. She however, said she was the one keeping the money and she was in command. Indeed the work of the husband was chase away birds from her rice plots. This showed that she was in command because normally she would be the one chasing the birds.

The other cultural category is the Maasai women. The Maasai women from Tanga Region, to the Region of their recent origin, Arusha, are known for being marginalized by their men. They do not have much decision making powers and men decide on most things which concern their lives. They are often not allowed to attend public meetings and special efforts have to be made to reach them. This is often done through government channels, for this independent pastoralist group often does not want to quarrel with the government.

What the technology has done is not to change gender relations. At times it has gone to change the behavior of Maasai men but not gender relations. Thus for example in Handeni the Maasai who formerly hardly took a bath, and were using traditional ghee and soils to keep their skins healthy, now demand water for bathing when they come home every evening. The reason being that there is plenty of water brought in by women using donkey pulled carts from long distances. What the technology has done is to ease up the task of the women who had to carry the firewood and water on their back from long distances.

Conclusion

In this paper, we wished to discuss the struggles of rural women, to move themselves from poverty and improve their material lives and gender relations.

Gender relations are far from being transformed in the rural areas of Tanga because cultural roles still play significant influence. Women themselves seem to take for granted some of these relations, apparently to maintain a certain harmony for the benefit of their children. In doing so they perpetuate the patriarchal system in that it would be their sons and not daughters who inherit their sweat.

The introduction of intermediate technology has by and large improved agricultural production, has eased food processing and the animal drawn cart has lightened the tasks of women in carrying water, fuelwood and agricultural produce. It has improved the lives of women but it has changed significantly the gender relations, as power still lies with the man. The women groups provide an opportunity for women to take matters into their hands, they need encouragement. These provide forums which would provide the seeds for the profound transformation of the rural societies.

A revolution in gender relations might not have been achieved but technological change in rural Tanga provides change in the right direction, however modest.

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PATTERNS OF CHANGE AND CONTINUITY IN EDUCATION IN SUB-SAHARAN AFRICA

By
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On this eve of a new millenium, African nations have continued to be "shepherded into penury and dissolution," by monumental and unprecedented problems. The continent has paused on the razor edge of total collapse. The crises are most severe in Sub-Saharan Africa where several nations have been the site of a rapid succession of military take-overs. There are problems of hunger, illiteracy, chronic embezzlement, sickness, massive unemployment and, for millions, a sense of hopelessness. "The nations of Africa", editorized a Boston Globe article, "crowd the top of nearly every international index of misery." Others were more sarcastic: "Africa is no longer part of the Third World. It is the Fourth World," wrote the journalist David Lamb.¹ Surprisingly Edem Kodjo, a secretary-general of the organization of Africa Unity, joined the chorus. "Africa is nothing, does nothing, nor can do anything," he anguished.²

In the midst of these crises, the World Bank and the International Monetary Fund (IMF) have stepped in with their Structural Adjustment Program as a solution to Africa's most severe problems. But by now it is common knowledge that programs emanating from the World Bank and the IMF, designed to cure Africa's ills, have failed. One observer has labeled those organizations as the homes of economic misplanners, charging that, "the IMF strategy is to fleece and bankrupt it [Africa], and hand it over to western creditors for debt trap peonage."³

Experts in the west have been busy at work analyzing the origins and causes of Africa's plight. While many have made a living lecturing and relecturing on Africa's problems, others have rushed to the conclusions that the region's woes result from the continent's inability to implement and sustain a western style democracy and a free market system. Africans are, therefore, responsible for their own problems. True, Africa is currently faced with monumental and unprecedented problems. But analysts whose perception of Africa is based on a diet of negatives have omitted the other side of Africa's story. In fact they have foreshortened that continent's historical record.

Despite the immense crisis facing the region, Africa is home to over 600 million people. As the first frontier of human existence, Africa continues to be a continent with enormous human and natural resources. Neither the popular books nor media stories tell the whole story. They don't discuss the complex social patterns that exist