

## Review

# Land reform as a strategy of breaking the circles of poverty in former colonized states of developing countries: A review

L. Musemwa<sup>1\*</sup> and A. Mushunje<sup>2</sup>

<sup>1</sup>Risk and Vulnerability Assessment Centre, University of Fort Hare, P. Bag X1314, Alice 5700, Republic of South Africa.

<sup>2</sup>Department of Agricultural Economics and Extension, University Of Fort Hare, P. Bag X1314, Alice 5700, Republic of South Africa.

Accepted 16 April, 2012

The main long standing objectives of the land reform programme have being to address the imbalances in land access. At the same time, extending and improving the base for productive agriculture in the smallholder farming sector, including bringing idle or under-utilized land into full production. This constitutes the key dimensions of land reform programme. Uncertainties regarding the distributed land have been reported. Cost-benefit analyses of the whole programme are made in terms of levels of output, foreign exchange earnings, land productivity, agricultural employment and the loss of agricultural expertise (white farmers). The main objective of this paper was to review relevant literature on the contribution of land reform towards poverty reduction in developing countries. This paper will also enable countries which are yet to implement land reform to either adopt the land reform strategy or utilise other poverty reduction initiatives aimed at resolving growth and development of the landless and the rural poor. The advocates of land reform claimed that if the problem of land ownership skewed towards race remains, racial conflicts may occur which are more costly and harmful to the citizens. With rapid population growth, the opponents of land reform claim that there is 'not enough land' to allow all those that are involved in farming to have their own land. Politically, it is not going to be easy to redress the present unacceptable land ownership inequalities without at the same time, seriously impairing the productive capacity of agriculture and without incurring costs which are at times unacceptable to society as a whole. Land redistribution alone will not bring any lasting benefits to agriculture but it should be accompanied by increases in farm and labour productivity.

**Key words:** Poverty, employment, developing countries, inequalities, expertise, productivity.

## INTRODUCTION

Traditionally, agriculture has played a significant role in the economies of most, if not all developing countries which are classified as non-oil producing countries (Garcia, 2004). According to FAO (2006), an estimate of farming remains the only source of income for some 70% of the world's rural poor. Despite significant increases in the value of world trade in food products over the past twenty years, the share of developing countries in world food trade is essentially at the same level (27%) as 20

years ago (Garcia, 2004). According to Richardson (2006), the decline in the contribution of agriculture to the economies of the third world countries is attributed mainly to climatic change and land reform policies. In the past, the large scale commercial farmers have relatively met domestic food and local industrial requirement and have exported a wide variety of cash crops especially, the non-food cash crops such as tobacco (Wekwete, 1991). This author also highlighted that the governments of today have no option except to redistribute land more equitably; however, these governments must retain the confidence of large scale farmers who even in times of drought satisfy national food requirements and generate foreign currency desperately needed by these former colonized

---

\*Corresponding author. E-mail: [lmusemwa@yahoo.co.uk](mailto:lmusemwa@yahoo.co.uk). Tel: +27 71 052 7070.

states through exports.

The land reform policy has sparked a debate internationally, that the redistribution of agricultural land to small holders will increase, or decrease total factor productivity and efficiency in the longer term (Mazumdar, 1965). As noted by Moyo (2004), the debates from the late 1970s up till date have centered, mainly, on the merits and demerits of the redistribution of land, not to argue that 'some' land should not be redistributed. Farm efficiency and how to measure it, is an important subject in the agriculture of developing countries (Parikh et al., 1995). Production efficiency is usually analyzed by separately examining its two components, technical efficiency and allocative efficiency (Fa`re et al., 1994). Xu and Jeffrey (1997) defined technical efficiency as the ability to produce a given level of output with a minimum quantity of inputs with a certain technology. Allocative efficiency refers to the ability to choose optimal input levels for given factor prices. Economic or total efficiency is the product of technical and allocative efficiency. However, several studies discovered a clear and direct relationship between small farms and a high level of social and economic development in small rural areas (Van Zyl et al., 1996). The most important of these studies reported that as compared to a community surrounded by large farms, a small farm community had twice as many businesses, 61% more retail trade and three times as many households and building supply purchases (Appalachian Land Ownership Task Force, 1981). It supported more people per dollar of agricultural production, had a better average standard of living, a much greater proportion of independent businessmen and white collar workers, more and better schools, and twice as many civic organizations, churches and means of community decision making (Appalachian Land Ownership Task Force, 1981; Van Zyl et al., 1996; Utete, 2003).

Also, an ecological argument suggests that the farming practices utilized by small farms are more ecologically sound than those on large farms. In most of the developing world, there exists an inverse relationship between farm size and efficiency (Van Zyl et al., 1996). This is to say that once a small minimum size is exceeded, family farms relying primarily on family labour, are generally more productive than larger farms relying primarily on hired labour. They also create a lot of employment for the ever-growing unemployed population than large scale farms that in most cases are mechanized (Van Zyl et al., 1996). Politically, it is not going to be easy to redress the present unacceptable inequalities. It is however, a difficult task to bring about effective change to the present well-established land ownership patterns, without at the same time, seriously impairing the productive capacity of agriculture and without incurring costs which are at times unacceptable to society as a whole. Till date, the land reform policies are still facing criticism, obstacles and resistance from the

large scale sector and from developed countries. This chapter therefore explores literature on the proponents and opponents of land reform as well as, the efficiency arguments for land reform.

## PROPONENTS OF LAND REFORM

Proponents of land reform are those that support the land reform programme. They claim that the opponents of land reform do not focus on the demerits of not redistributing land and do not see the continued land hunger, food shortages, and unequal distribution of income but only drawbacks related to losses in output and reductions in foreign currency earnings from exports (Moyo, 2004; Ankomah, 2000). According to Van Zyl et al. (1996), the failure to execute a major land reform or the delayed implementation of such reforms and continued neglect of rural sectors seems to have far more adverse consequences than the relatively minor risks associated with the process of land reform in countries with highly dualistic farm size structures, like Zimbabwe.

The proponents of land reform argued that if land redistribution does not take place, the problem of land ownership skewed towards race remains and racial tensions may occur and this may trigger racial conflicts which according to Joireman (1996) are more costly and harmful to the civilians. The proponents of land reform advocate that most of the large scale farmers are underutilizing their land, though they play important role in the farming sector of non-oil producing developing countries whose economies are agriculturally based hence, they advocate for the large-scale redistribution of such lands. Moyo (2004) and Ankomah (2000) confirmed the notion that large scale commercial farmers under utilise their land.

According to the study of Moyo (2004), land utilization by large scale commercial farmers in Mashonaland provinces (areas within natural region (NR) II and NR III), the total area in Mashonaland amounts to 4.3 million hectares, which constitutes 32% of the overall land owned by the large scale commercial farmers. However, Moyo (2004) found that only 10% of this prime land is actually cropped, and this represents 75% of the total area cropped by large scale commercial (LSC) farmers in the country as a whole. This therefore, implies that substantial portions of land can be made available for land redistribution without necessarily affecting the national output. The ability of former colonized states to distribute the underutilized land will therefore promote equity and improve the livelihoods of the rural poor who are kin to be involved in farming. Those who will be working will therefore not lose their jobs as the confidence within the commercial farmers and that those who own industries will be retained as inputs will remain available for the local industries. This therefore, stands to reduce rural poverty as both small scale farming is

promoted by providing land to those that do not have it currently and increase employment opportunities in both the farming and industrial sectors as investment confidence is maintained for the international community.

## OPPONENTS OF LAND REDISTRIBUTION

One of the most interesting argument raised by opponents of land reform is that there is 'not enough land' to allow all those that are involved in farming to have their own land, therefore, land redistribution is impractical (Wekwete, 1991). With rapid population growth, this problem will only worsen in future. In addition, they highlight that it is not important to divide existing farms, but to increase employment opportunities for the rural poor (Putzel and Cunningham, 1989). However, to argue that there is not enough land to allow distribution ignores the fact that the current rural population actually survive on the land now. Land reform seeks to redistribute land in order to enhance both the productive potential of the existing small scale farmers and that of the land under cultivation. The security and higher incomes for all will create opportunities for alternative employment in both rural and urban industries and increase opportunities for a rapid development of services in the countryside.

Wekwete (1991) notes that some of the conservative views advanced by opponents have been characterized by a strong argument that resettlement areas have not been as efficient as the former commercial farms. This is also based on the premise that the white large scale commercial farmers are more experienced than small scale commercial farmers. They argued that it is risky to transfer much of the prime land to inexperienced farmers as this affects aggregate agricultural output. According to opponents of land redistribution, land reform beneficiaries will not improve the land and that farm workers are incapable of running their own farms. Land owners point to the lack of attention or improvements carried out by peasant farmers on the land they cultivate (Newell et al., 1997). This argument represent the traditional sentiments of large land owners whose world-view justifies their privilege position in the rural society. Peasant farmers can make improvement on their farms, when they have the opportunity to cultivate their own land and get security on the land knowing that they, and not the land owners, will reap the benefits (Putzel and Cunningham, 1989).

Land redistribution alone will not bring any lasting benefits to agriculture but it should be accompanied by increases in farm and labour productivity. Also, simply giving or increasing size of land holdings will not achieve the transformation of the traditional peasant sub-sector. There is need for a complete package of the needs of small scale farmers but the governments of third world countries do not have resources to achieve this. As a result the opponents argued that the needs of the large scale commercial farming sector should be guaranteed

because it is an integral part of the economy, which makes a significant contribution in terms of employment, foreign exchange, and necessary inputs to industry. Here, the developing countries governments' problem is to counter the efficiency and productivity arguments posed by the commercial farmers.

## THE EFFICIENCY, FOOD SECURITY AND ECONOMIES OF SCALE ARGUMENT FOR LAND REFORM

### Farm size, land use intensity and efficiency

A study of India's Farm Management Survey sparked a debate in the 1960s on an observed inverse relationship between farm size and productivity (Sen, 1962). The observed inverse relationship according to Sen (1962) implied that small farms are more efficient than large scale farms. The observations are based on the fact that on the average, small farms employed more inputs per unit area and as a result had a higher output. The underlying principle behind this relationship according to Sen (1962) was based on the assumption that peasant farmers were well endowed with potential labour with low or zero opportunity cost while facing a severe constraint on credit. He further attributed this potential labour to the fact that small farms would employ labour up to the point of zero marginal productivity. On the contrary, large farms would employ labour up to the point where the wage rate equals to the marginal product implying declining productivity in terms of output per unit area but increasing profitability.

There seems to be a wider consensus among authors that the inverse relationship between productivity and farm size is a result of differential factor use intensity, (Newell et al., 1997). In Rwanda, Bwiringiro and Reardon (1996) found that small Rwandan farms achieve three times greater land yields, use four times more labour and have four times the number of plots per hectare than larger farmers do. They concluded that as a result of this, small farms have greater average and marginal productivity of land and are less allocative efficient. Still on the same note, Cornia (1985), argued that high labour use intensities on small farms is mainly found in the land market where small scale farmers face higher effective purchase prices for land. This biased resource position for peasant farmers has several implications about their use of labour vis-à-vis large scale farmers. Resource-constraint-farmers use labour more intensively for each crop, they use more of the available land, choose more labour intensive crops, and use their own labour for land improvements. All these implications according to Cornia (1985) leads to the conclusion that small farmers have a higher resource use per unit of land that will in turn results in them getting more returns from farming thereby alleviating rural poverty. This factor use intensity gives

small scale farmers a productivity advantage over their large scale commercial farmers counterpart, but with the advent of the green revolution technology, small scale farmers might lose this advantage, since in the absence of technical extension and credit services, small farmers do not have access to these technologies. Technology is therefore, likely to reverse this advantage with small scale farmers of higher factor use intensity. There is also a considerable belief that the greater intensity of family labour as manifested in the small scale farming sector is attributed to desperation (Ghose, 1979). This view suggests that if small farmers are struggling at the edge of survival, they are more likely to work harder compared to their counterparts (large scale farmers) although, it would not be prudent from a humanitarian point of view to equate the welfare of the small scale farmers' households with its productivity, if that productivity is as a results of poverty.

Dualistic labour markets have also been proposed as an explanation to factor intensity differentials between small scale and large scale farmers. The rationale as it is, lies on the fact that if family labour is cheaper, then, there should be a higher labour to land ratio on the smaller farms. There are logistical economic reasons for a gap between the supply prices of family and hired labour. There is less uncertainty about effort with family labour than with hired labour, making the opportunity cost for family labour lower (Mazumdar, 1965).

Feder (1985) offers an alternative explanation of the more intensity use of family labour, based on three propositions: firstly, that family labour is more efficient than supervised labour; secondly, that family labour is more motivated than hired labour and can supervise the latter; and thirdly, that the supply of working capital is directly related to farm size. The greater efficiency of family labour can be due to two factors. Firstly, as the ratio of hired large farm labour rises, supervision becomes more time consuming and less effective. Secondly, the effectiveness of supervision will decrease as the social distance between supervisors and the hired labour increases (as it would be on larger farms), (Boyce, 1987). Ray (1998) argued that in a world with unemployment, somebody who hires labour is likely to have the opportunity costs of an additional unit of labour at market wage rate, while for family labour the opportunity cost are lower because of the possibility of unemployment. He argued that this leads to higher employment of family labour by farmers with small sized plots. Therefore, the observed positive relation of share of family labour to efficiency is not surprising and due to the substitutability of inputs, the small size farmers deliver more care to the plants and are able to increase the efficiency of the other production factors without increasing the use of these factors.

According to Helfrand and Levine (2004), the relationship between farm size and efficiency is more complex than what is normally believed. They found that

for farms up to 200 ha, efficiency did fall as farm size rose, but beyond this size it started to rise again. The most important reason forwarded relate to preferential access by large farms to institutions and services that help lower inefficiency (such as rural credit, technical assistance and rural electricity) as well as more intensive use of technology and inputs raise productivity. If one could create an environment in which small farms had equal access to productivity enhancing institutions and greater access to modern technologies and inputs, then, an inverse relationship could prevail even up to about 1000 ha.

Bhalla and Roy (1988) argued that, if land quality and farm size are inversely correlated and farm size and cultivated area are directly correlated, then, excluding land quality from regressions of land yields on cultivated area would bias the estimated coefficient of cultivated area downwards. But this would bias only if the soil quality differences were not due to investments made by the farmers themselves. Thus, agro-climatic conditions and soil quality are crucial determinants of agricultural productivity, as well as measures of farmers' investment in soil quality must be included in investigations of productivity (Nuppenau, 2009). Attempts to incorporate soil quality into empirical investigations of the inverse relationship have mixed results. Newell et al. (1997) argued that farms are smaller in fertile regions than in less fertile regions and as a result of this, output per hectare is higher on small farms. However, while land quality explains some of the inverse relationship, it does not explain all of it. Both natural soil quality and investments in soil quality all contribute to productivity (Carter, 1994; Newell et al., 1997).

### Poverty alleviation and food Security

Agrarian reform must be the starting point and the central component of any programme which seeks to break the cycle of poverty and initiate a process of national development (Putzel and Cunnington, 1989). In order to make land reform successful, there is need to assist the land reform beneficiaries in their efforts, not only to secure land, but to form cooperatives and to gain access to agricultural credits, inputs and produce markets. By increasing peasant incomes and security on the land and by breaking down rural monopolies, land reform could increase agricultural production and expand the market for domestic manufacturing. In the past, commercial farmers have re-invested only a limited portion of their profits in the agricultural sectors. Much of the wealth earned from export orientated cash crops has been repatriated to the developed countries by the commercial farmers and trans-national companies (Putzel and Cunnington, 1989). In fact, wealth earned from exporting agricultural products in the past has not contributed to the establishing of a viable and dynamic industrial sector in

these countries. Agricultural production oriented to the world market has not been developed to supply inputs to local industries (Putzel and Cunningham, 1989). In addition, most large scale farmers in most developing countries have diverted into game farming from livestock farming and horticulture (flower production) and other non-food cash crops such as tobacco and cotton from food crops. This type of production is now threatening world food security (Utete, 2003; Rugege, 2004). Contrary to this, the beneficiaries of land reform are to spend greater portions of the wealth generated in agricultural production within their areas. This would allow peasant communities to make improvements in housing, education and health services, and stimulate rural development and service activities. Land reform is therefore, designed to give more land to the people who produce the bulk of the nation's food requirements (peasant farmers are involved in livestock farming and food crop production) (Moyo, 2004).

For instance in Zimbabwe, in 1998, the former chief executive of the government Agricultural Rural Development Authority (ARDA), Dr. Joseph Made, said that assuming all white commercial farmers stopped farming in Zimbabwe and no one started farming on any of those lands at all, the country would still have 70% of its annual maize production, 65% of cotton, and 40% of wheat. The crop that would see its production cut all the way down to just 10% is Tobacco (Utete, 2003). About 30% of the maize comes from the commercial sector which includes some indigenous blacks, numbering about 700 compared to the 4,300 whites in that sector. In addition to these 4,300 whites, there is the government's ARDA which also produces maize at a larger scale. ARDA is a government parastatal agency which deals with state farm production mainly involving large agricultural and rural development projects. Dr. Joseph Made dismissed widespread fears that the land reform programme will turn Zimbabwe into a nation of subsistence farmers.

"We have lot agronomists walking the streets because they cannot get jobs. ARDA is willing to release its experts to assist in training and giving skills."

Hence land reform, according to Dr Joseph Made is likely to increase the production of food crops (Utete, 2003). In the Indian state of Kerala, agricultural labourers who received tiny house-and-garden plots of 1/10 acre (0.04 ha or about 4350 square feet) found themselves considerably better off in terms of income, family nutrition, and status (Prosterman and Hanstad, 2003). Similar findings have come from recent research in the Indian states of Karnataka and West Bengal. In Karnataka, agricultural labourers families who received government-granted house-and-garden plots of only 1/25 acre (0.016 ha or about 1730 square feet) were able to produce most of the family's nutritional needs for

vegetable, fruits, and dairy products and obtain cash income equivalent to one fulltime adult wage from plant and animal products on the tiny plot (Prosterman and Hanstad, 2003). Land reform beneficiaries in Karnataka had invested in land improvement measures and raised their land productivity and socio-economic status. However, conditions of certain categories of people such as widows became worse as a result of tenancy reforms. It was observed that many of the occupant-tenants as well as, informal tenants preferred to borrow from local money lenders at high rates of interest because of convenience and out of fear of harassment (Chatterjee, 2002). This calls for credit reform in the institutional sector for streamlining and increasing the accessibility of the farmers to institutional credit which could help improve their productivity and income levels and enhance food security and ultimately reduce poverty.

In China, the Chinese Communist Party won the popular support of the mass of the rural population, largely due to a land tenure reform where numerous poor peasant farmers were given land with full private ownership during 1949 to 1956 (Prosterman, 2009). This resulted in a 70% increase in grain production and an even higher increase in farm income (Chen et al., 2008). In 1956, China unfortunately decided to follow in the footsteps of the former Soviet Union and promoted collective farms. Private ownership and family farms were prohibited, and collectives (village communities or their agglomerations) became land owners and farm operators. Agricultural production plummeted, and 15 to 30 million consequent deaths occurred due to hunger during the years 1958 to 1962 (Peng, 1987).

In the late 1970s, facing still-lagging farm production, China chose to abandon collective farming and conducted a so-called "Household Responsibility System" reform (HRS) by giving individual farm families limited "use rights" to farm land (Li and Prosterman, 2009). The introduction of the HRS unleashed the energy and resources of scores of millions of farm families and jump-started China's agricultural and rural growth. Grain output increased steadily and the percentage of population living below \$1.25 a day in China decreased in 1981 to 2005 from 84 to 16%. The state distributed virtually all land of the collectives to each farm family in individual landholdings through the decollectivisation process. Unfortunately, the families received insecure rights to the land. Local officials could relocate them from plot to plot through periodic "readjustments" in the name of maintaining absolute equality of distribution as household size changed. Despite these shortcomings, the change from collective farming to individual (even though insecure) tenure created the conditions for increasing crop yields by more than 80% in less than a decade. By 2003, China was nearly halfway through completing a major new land reform that is giving these families, totaling about 850 million persons, individual land contracts to secure and transferable 30-year use rights

(Prosterman and Hanstad, 2003). This land tenure reform was enormously successful in lifting the living standards of hundreds of millions of rural people, and was the driving force behind the single greatest poverty-reduction achievement worldwide (Ravallion and Chen, 2004; Bruce and Harrell, 1989). According to Sachs (2005), this new household responsibility system gave massive incentives to individual farmers to work harder, apply inputs with more care, and to obtain higher yields.

By increasing the production of food crops and raising rural incomes, a land reform programme could put an end to malnutrition and achieve food security. However, reform does not necessarily mean a halt in the production of profitable commercial crops. Rather than ruling out the cultivation of export crops, reform aims to remove the dependence on export-oriented production which places farmers at the mercy of trans-national companies and volatile international commodity markets (Putzel and Cunningham, 1989). By allowing farming families to become more independent and self-reliant and encouraging participation in cooperatives, a stronger basis could be established for democratic development in the countryside. Agricultural production after land reform is oriented primarily towards domestic food and industrial consumption and only secondarily to the export market thereby, achieving the central objective of the land reform which is to increase food security for the nation and food supply for the rural and urban poor.

Today, the potential for food production in commercial farms is not exploited. They have specialized on the production of export crops. What is more disturbing is that some of the commercial farmers, when prices for export crop are low, land owners often leave land idle rather than allow food-crop production. If the system be rationalized, then tenants and farm workers who gain access to land would be able to plant sufficient food crops to satisfy their requirement (Ghose, 1979). Rather than devoting the entire regions of the country to non-food cash crops, small scale farmers would be able to develop a more rational combination of food and non-food crops. Where it is profitable to produce non-food cash crops, peasant producers could combine these with food crops. The redistribution of income involved in a comprehensive agrarian reform programme should help all of the poor nations to get an income sufficient to guarantee an adequate diet. According to Putzel and Cunningham (1989), the history of export-oriented production in many countries proves the dangers of an exclusive reliance on the world market, for example, when sugar prices crashed in the mid-1980s, it led to starvation in Negros and Philippians.

Opponents of land reform argued that small scale farmers and farm workers do not have the knowledge and skills required in the production of export crops (Wekwete, 1991). They claimed that land reform is a recipe to subsistence farming and a halt in export production. Export crops do not only require high capital

investment, but also considerable skill and specialized knowledge of production techniques and international markets. Small scale farmers and cooperatives can and will produce crops for the export market when it is profitable to do so. Small scale farmers with enough support and encouraged to form cooperatives, will be able to acquire the skills and specialized knowledge required for the production of export crops. By ensuring food production, a diverse crop structure and a significant degree of production for domestic industrial needs, land reform beneficiaries can avoid becoming entirely vulnerable to the price and exchange rate fluctuations in the world market and the protectionist barriers of the developed countries.

### Economies of scale

In theory, economies of scale are defined by a production function which exhibits a more than proportional increase in output for a given increase in magnitude of all inputs. In practice, the concept provides problems as there rarely is a situation when an increase in magnitude of some inputs does not imply a change in the factors of production (Peterson and Kislev, 1991). According to Binswanger et al. (1993), the sources of economies of scale, in the form of cost advantages accruing to increased farm sizes which underpin the justification for the move towards large-scale production are:

1. Lumpy inputs that cannot be used below a certain minimum level such as farm machinery and management skills.
  2. Advantages in the credit market and in risk diffusion arising from ownership of large holdings; and
  3. Processing plants that transmit their economies of scale to farms, usually giving rise to wage plantations
- Farm machinery such as tractors and combine harvesters are lumpy inputs, and reach their lowest cost of operation per unit at relatively large areas. With the introduction of agricultural mechanization many people believed that the economies of scale associated with it are so large that it makes the small scale farming outdated and this in some instances resulted in some small scale farmers selling or leasing their land to large-scale farmers (van Zyl et al., 1996). However, it became quickly clear that machine rental can permit small scale farmers to evade the economies of scale advantage associated with machines in all but the most time-bound of operations, such as ploughing and planting (seeding) in dry climates or harvesting where climatic risks are high. In those situations farmers compete for early service and therefore, prefer to own their own machines. Thus, economies of scale associated with machines do increase the minimum efficient farm size, but by less than expected because of rental markets. The use of lumpy inputs leads to an initial segment of the production

function that exhibits increasing returns with operational scale, but these technical economies vanish when farm size is increased beyond the optimal scale of lumpy inputs or when rental markets make the lumpiness of machines irrelevant.

Management skills and lumpy inputs are also indivisible, such that the optimal farm size increases along with increases in the manager's skills. Technical change strengthens this tendency. The use of fertilizers and pesticides, and arranging the finance to pay for them, require modern management skills and so does the marketing of high quality produce. In an environment of rapid technical change, acquiring and processing information becomes more and more important, giving better managers a competitive edge in capturing the innovator's rents. Therefore, optimal farm sizes tend to increase with more rapid technical change. However, some management and technical skills, like machinery can be contracted from specialized consultants and advisory services can be provided by publicly financed extension services. Contract farming for processing industries or bulk marketing companies often involves the provision of technical advice.

Land, because of its immobility and robustness, has excellent potential as collateral, making access to credit easier for the landlords. As pointed out by van Zyl et al. (1996), rural credit markets are however difficult to develop and sustain. The high transaction costs of providing formal credit in rural markets imply that the unit costs of borrowing decline with loan size. Many commercial banks do not lend to small farmers because they cannot make a profit (Strauss Commission, 1996). Raising interest rates on small loans does not overcome this problem, since it eventually leads to adverse selection for a given credit value, therefore, the cost of borrowing in the formal credit market vary inversely with the amount of land owned. Most rural credit markets only offer in most cases funds to overcome emergencies which in most cases are very small amounts and at very high interest rates. Access to formal commercial bank credit therefore gives large scale farmers a considerable advantage in risk diffusion over small farmers without access. Hence, emphasis is needed for all efforts to develop rural credit, including co-operative banking and other savings-mobilization mechanisms if small scale land reform beneficiaries are to gain access to credits. Access to credit will therefore, enhance their farm business production levels thereby making them more food secured.

There are also economies of scale that arise from the processing or marketing stage. However, economies of scale in processing alone are not a sufficient condition for the explanation of the existence of very large farms (estates and plantations). The sensitivity of the timing between harvesting and processing is crucial as well, sugarcane, tea or the fruits of the oil palm have to be processed within hours of harvesting. Plantation style

production has never been established for easily stored products such as wheat or rice which can be bought at harvest time in the open market and stored for milling throughout the year. Even sugarcane can be contracted by millers with small farmers as long as the logistics of harvesting and transportation can be solved. This applies to commodities as diverse as sugarcane, tea, coffee, bananas, rubber and oil palm, as well as tobacco and cotton. Where the same crops were introduced into existing smallholder systems, contract farming prevails. Processors seem not to have found it profitable to form plantations by buying out smallholders and offering them wage contracts. This suggests either that the coordination problem associated with plantation crops can be solved at a relatively low cost by contract farming, or that imperfections in the land sales markets are so severe that it is prohibitively expensive to create large ownership holdings by consolidating small farmers.

## CONCLUSION

Large scale land owners and developed countries oppose the land reform, whilst the rural majority of developing countries support the land reform programme. However, most of the studies demonstrated clearly that small farms are efficiently utilized than large scale farms. Experience from other countries such as Zimbabwe and South Africa, which carried out land and agrarian reform programmes, demonstrated that the market on its own is unable to effectively alter the pattern of ownership in favour of equity for the targeted beneficiaries of land reform, as well as in favour of broader goals of job creation and poverty alleviation. If land reform benefits the poor, it will be the best strategy of alleviating rural poverty in former colonized countries. Most of the beneficiaries would be able to farm on the small pieces of land using in most cases, family labour and hired machinery. Household family labour is more efficient than hired labour. Land reform beneficiaries use hired machinery as they are not able to buy their own, using the small credits that they have access to as a result of their small collateral (pieces of land) as evidenced by the China example. These small scale farmers provide better employment opportunities than large scale farmers for the rural poor as they do not depend on machinery to a larger extent, since their access to machinery is limited by lack of availability of finance.

## ACKNOWLEDGEMENTS

The authors are grateful to the Risk and Vulnerability Centre of the University of Fort Hare funded by the National Research Foundation of South Africa (NRF) and South African National Department of Science and Technology (DST) for the Post-Doctoral Fellowship they

offered to Dr L. Musemwa. Many thanks also go to the University of Fort Hare, Faculty of Science and Agriculture management and the Govan Mbeki Research and Development Centre (GMRDC) for the technical support and for paying the handling fee of this article, respectively.

**REFERENCES**

Ankomah B (2000). Why Mugabe is right and these are the facts. *New African* 385(14-17):22-23.

Appalachian Land Ownership Task Force (1981). Land Ownership patterns and their impacts on Appalachian communities: A survey of 80 Countries, Appalachian Regional Commission.

Bhalla SS, Roy P (1988). Mis-specifications in farm productivity analysis: the role of land quality. *Oxford papers* 40(1):55-73.

Binswanger HP, Deininger K, Feder G (1993). Power, Distortions, Revolt and Reform in Agricultural Land Relations. Discussion Paper, World Bank, Washington, D.C.

Boyce JK (1987). Agrarian Impasse in Bengal: Institutional Constraints to Technological change. Oxford: Oxford University Press.

Bruce J, Harrell P (1989). Land Reform in the People's Republic of China 1978-1988. Land Tenure Center Research Paper No. 100.

Bwiringiro F, Reardon T (1996). Farm Productivity in Rwanda: Effects of farm size, erosion and soil conservation investments. *Agric. Econ.* 15(2):127-136.

Carter MR (1994). Sequencing Capital and Land Market Reforms for Broadly Based Growth. Paper pp. 379, Department of Agricultural Economics, University of Wisconsin, Madison.

Chatterjee P (2002). Land Reform in India Necessary but not Sufficient to Fight Poverty: Confirmed land rights lead to higher productivity. *Development and Cooperation* 2:21-22.

Chen XW, Zhao Y, Luo D (2008). A Review of and a Forward Look at China's Rural Reform of the Past Thirty Years. People's Press (China) 39(67):363-415.

Cornia GA (1985). Farm size, land yields and the Agricultural function: An analysis for fifteen developing countries. *World Dev.* 13(4):513-534.

FAO (2006). State of Food Insecurity in the World 2006. Rome: Food and Agriculture Organization (FAO).

Feder G (1985). Relation between farm size and farm productivity. The role of family labour, supervision and credit constraints. *J. Dev. Econ.* 18:297-313.

Garcia Z (2004). Impact of Agricultural Trade on Gender Equity and Rural Women's Position in Developing Countries. [http://glow-boell.de/media/de/txt\\_rubrik\\_5/sus\\_Garcia.pdf](http://glow-boell.de/media/de/txt_rubrik_5/sus_Garcia.pdf).

Ghose AK (1979). Farm size and land productivity in India Agriculture: A reappraisal. *J. Dev. Stud.* 16(1):27-49.

Fa're R, Grosskopf S, Lovell CAK (1994). Production Frontiers, Cambridge University Press, Cambridge.

Helfrand SM, Levine ES (2004). Farm size and the determinants of productive efficiency in the Brazilian Centre West. *Agric. Econ.* 31:2-3.

Joireman SF (1996). The minefield of land reform: Comments on the Eritrean land proclamation. *Afr. Aff.* 95:268-285.

Li P, Prosterman R (2009). From collective to household tenure: China and elsewhere. In Prosterman, R.L., R. Mitchell and T. Hanstad (eds.), *One Billion Rising: Law, Land and the Alleviation of Global Poverty*: Leiden University Press.

Mazumdar D (1965). Size of farm and productivity: A problem of India peasant Agriculture. *Economica* 32(126):161-173.

Moyo S (2004). Overall Impacts of the Fast Track Land Reform Program. Prepared for the review of the Zimbabwean Agricultural Sector following the Implementation of the Land Reform Project. AIAS, Harare, Zimbabwe.

Newell J, Pandya K, Symons J (1997). Farm Size and Intensity of Land use in Gujarat. *Oxford Economic Papers* 49:307-315.

Nuppenau EA (2009). Size, Energy Use and Economies of Scale: Modeling of Policy Instruments to Address Small Farms' Advantages if Energy Is Scarcer and Ecology Matters?" 111 EAAE-IAAE Seminar 'Small Farms: decline or persistence' University of Kent, Canterbury, UK. 26th-27th June.

Parikh A, Ali F, Shar MK (1995). Measurement of economic efficiency in Pakistani Agriculture. *Amer. J. Agric. Econ.* 77(3):675-685.

Peng X (1987). Demographic Consequences of the Great Leap Forward in China's Provinces. *Population and Development Review* 13(4):658.

Peterson W, Kislev Y (1991). Economies of Scale in Agriculture: A re-examination of the evidence. Staff Paper, pp. 91-43, Department of Agricultural and Applied Economics, University of Minnesota, St. Paul.

Prosterman R (2009). Redistributing land to agricultural laborers", In Prosterman, R.L, Mitchell, R. and T. Hanstad (eds.), *One Billion Rising: Law, Land and the Alleviation of Global Poverty*: Leiden University Press.

Prosterman RL, Hanstad T (2003). Land Reform in the 21st Century: New Challenges, New Responses. Rural Development Institute reports on foreign aid development no. 117.

Putzel J, Cunnington J (1989). Gaining ground: Agrarian reform in the Philippines. WOW Campaigns Ltd, United Kingdom.

Ray D (1998). Development Economics. Princeton, New Jersey, USA: Princeton University Press.

Ravallion M, Chen S (2004). Understanding China's (uneven) progress against poverty. World Bank Policy Research Working Paper no. 3408.

Richardson JC (2006). Learning from Failure: Property Rights, Land Reforms, and the Hidden Architecture of Capitalism", American Enterprise Institute. [http://www.aei.org/publications/pubID.24196,filter.all/pub\\_detail.asp](http://www.aei.org/publications/pubID.24196,filter.all/pub_detail.asp).

Rugege G (2004). Land Reform in South Africa: An Overview. *Inter. J. Legal Infor.* 32(283):1-28.

Sachs J (2005). The end of poverty: Penguin press.

Sen AK (1962). An aspect of Indian agriculture. *economic weekly* 14:243-246.

Strauss Commission (1996). Final report of the commission of inquiry into the provision of rural financial services. Pretoria: Government Printer.

Utete CMB (2003). Report of the Presidential Land Review Committee under the Chairmanship of Dr Charles MB Utete Vol. 1: Main Report to His Excellency the President of the Republic of Zimbabwe. Harare: Government Printers.

Van Zyl J, Kirsten J, Binswanger H (1996). Agricultural Land Reform in South Africa: Policies, markets and mechanisms. Cape Town: Oxford.

Wekwete KH (1991). The rural resettlement programme in post independence Zimbabwe. As in Mutizwa- Mangiza and Helmsing edition: Avebury Gower Publishing Co Ltd.

Xu X, Jeffrey SR (1997). Efficiency and technical progress in traditional and modern agriculture: Evidence from rice production in China. *Agricultural Economics* 18(2):157-165.