

# Population Growth and the Development Problems of Africa: Origins and Implied Solutions

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## Introduction

The human population in the current less-developed countries (LDCs), has grown since the Second World War at unprecedented rates. From less than 2 per cent per annum to about 2.5% in the 1960/70s. Put in a more thematic context, or in alarming terms, this increase in rates has shortened the period within which the population could double correspondingly, from more than 35 to 28 years and down to less than 23 years.

Rapid population growth has raised concern, therefore, of the danger, at first, of the characteristically young age structure consuming investable resources, as demonstrated clearly by the Coale and Hoover simulation study of India, that subsequently influenced many development plans<sup>2</sup>; and then were added fears of depletion of resources, desertification and an almost unending litany of negative effects of population growth.<sup>3</sup> While it is not intended to imply that today's size and growth of population are not a problem as those who see vast areas of unoccupied land suggest, governments are facing a big challenge of providing services to rapidly growing populations with meagre resources. My concern, and this is my point of departure on the population debate, is that the population problem is being looked at from only one point or short period in time, rather than as an historical phenomenon. The latter course, as this paper will show, uncovers the origins, and so identifies key variables for any long term solution of the population problem.

The essence of the problem is basically the imbalance of population size and growth over those of other resources. This paper traces the trends in the determinants of growth of the two variables; i.e. population and resources. Though not intended as an historical analysis, the paper draws on work by others, particularly on Tanzania, to show that population and resources problems both originate from common causes, rather than population being the culprit, however much difficulty there is at one point in time, as today, of coping with increasing numbers.<sup>4</sup>

The core of the problem is the ecological collapse and subsequent stagnation of technology at a labour intensive level, caused by factors connected with over-exploitation of both human and other resources as production is extended from producing for subsistence to that for exchange or commercial purposes. While resources decline, populations grow rapidly, thus producing an imbalance.<sup>5</sup> Superficial analysis puts population growth as the culprit; however, it will be shown that population itself has been a dependent variable driven by other factors also connected with the ecological collapse and stagnation of technology.

The solutions to the population problem will thus be shown to be implied by the causes identified. Improvement of technology, it will be argued, offers the best avenue for overcoming both population growth and resource problems.

## **Origins of the population problem**

A proper assessment of the origin of the population problem, which was identified above as essentially an imbalance between population and resources, requires examination of the determinants of the two variables and the factors that have influenced their trends to the present state.

### **Population growth**

Rapid population growth in LDCs arose out of an unprecedented sharp decline in mortality while fertility, rather than falling, as in developed countries, persisted at a high level—a stage in the well known theory of demographic transition.<sup>6</sup> As it is a universally desirable trend for mortality to decline to a minimum level possible,<sup>7</sup> it is the persistence of high fertility that is the issue of concern. This, it will be argued, is connected with the factors that have caused the under-development of resources. It is therefore instructive to analyse fertility trends after the resources problem has been dealt with.

### **The under-development of resources**

The amount of resources available for both consumption and investment depends on two factors: (a) the amount of goods and services that can be produced, and (b) if there is exchange, availability is also dependent on the terms of exchange, i.e. how much external goods, a unit of the internal goods can bring. Under market exchange will be included the cost of government bureaucracy. This is because the modern system of government took over many household and community functions, for example education, security, communications, etc., supported by production by the population. The government factor is included because its cost has grown so much in recent years as to have a significant effect on development.

The production process consists of an essential element, namely technology, which, as will be argued below, holds one if not the key to both the explanation and the solution to the population problem. Technology determines the productivity of the factors of production, hence the total output for a given level of factor inputs over a period of time. On the other side of the coin, but important to the understanding of the persistence of high fertility, technology determines how much labour (and other factors) is required to produce a given level of output.

The highest level of technology that seems to have been reached here in Africa has largely been labour intensive. To mention a few examples, in agriculture, the main economic sector, the hoe and bush knife are the principal tools; in domestic activities, e.g. cooking, fetching water and firewood depend on a lot of human labour time input; in transport, walking and bearing the load on the head or so are the main means. The pertinent question is why technology has stagnated at a labour intensive level. The answer to this question will reveal the origin of the population/resource imbalance and all other related problems outlined above.

In the search for the cause of technological stagnation it is instructive to look at historical events since communities started producing for exchange.<sup>8</sup> It was essentially the destruction of the ecological, hence economic base and subsequent stagnation of technology and the demographic effects of these phenomena that hindered growth in production, but at the same time

influenced fertility to stay at a high level. These factors are investigated below and form the body of this paper.

### **The destruction of the economic base**

The term destruction presupposes the pre-existence of a "whole" self-sustaining economy. That this was the case, is well documented in Kjekshus and Iliffe in Tanzania<sup>9</sup> Booming economies in both agricultural and manufacturing spheres can be found in the reports of European travellers (or explorers) before the 1880's, showing that people did not only have full control of their environment, but, more importantly, lived in ecological balance with, and hence protected, natural resources. Some examples can be given; food bounty even in the now often drought-stricken central regions; production of textiles of a higher quality than imports; salt mining and processing works; and, perhaps a more pertinent factor, the technological level the economy had reached in both agriculture and heavy industry. In agriculture, irrigation canals were in use; in industry, there had developed modern methods of smelting iron which archeological research has dated as far back as 500 B.C., but discovered only recently in Europe in the late 19th century.<sup>10</sup> Such accounts make an earlier question as to why technology stagnated, more relevant and urgent for the uncovering of the source of the population problem.

It was the nature of the establishment of links with the outside world, first through "long distance trade" and later colonial occupation, that set in motion the processes of destruction and protracted stagnation of the local economy.<sup>11</sup> There were two main factors that destroyed the economic base; diseases and the process of colonial occupation.

Foreign diseases, notoriously smallpox, jiggers (i.e. sand fleas) and venereal diseases—with an absence of either natural immunity or cures against them—decimated as much as one-third to half of the population in most areas,<sup>12</sup> thus destroying the labour factor of production. In addition, the (domestic) animal population was almost wiped out by rinderpest and *trypanosomiasis*, the latter spread by the tse-tse fly that infested land which had reverted to bush as the human and animal populations both decreased in numbers and were concentrated into a few areas to facilitate colonial occupation.<sup>13</sup> The decline of numbers meant manure was no longer available for proper agricultural husbandry.

The process of establishing and maintaining colonial occupation struck the final blow in the destruction of the economic base, first by wars circa 1900 in Tanzania which involved, for example, burning of whole villages, then procurement of forced, cheap labour, spatial concentration of the population for effective control and creation of game reserves and settler plantations, and, lastly, forceful introduction of cash-cropping and other agricultural husbandry, but offering low prices for produce, a practice that has continued to the present independence period.<sup>14</sup>

These processes withdrew male labour from the indigenous economy, while low prices and wages did not compensate for the withdrawn labour, consequently leading to stagnation, as discussed below. In other areas, cash crop production was prohibited, e.g. in Kenya and Southern Africa, in order to release labour to the mines and settler plantations, even though in these areas, local farmers were out-competing the settler, as seen at agricultural shows.<sup>15</sup>

Indigenous industry received similar treatment of prohibition; apart from the reason of labour procurement, it was also to make way for imports, rather than being purely the result of economic rationality of comparative advantage, inherent in the Hymer-Resnick model of development. <sup>16</sup>

### **Stagnation of technology**

After incapacitation by the factors of "long-distance trade" and colonial occupation, the economy was kept from picking-up its original momentum by falling terms of trade and (in Tanzania) government bureaucratisation of society and its related high costs. The falling terms of trade can be summarised by falling commodity export, but rising import prices, with the oil crisis and international debt and servicing being the most disastrous factors of the current period.

The extent of growth of bureaucracy in Tanzania, of all internally generated factors, has become the most serious villain that has brought economic stagnation. <sup>17</sup> Its effect is not only through the cost of its maintenance but also its bureaucratisation of society which interferes in all spheres of life of a person, a phenomenon that can hardly be attributed to the now common scapegoat in Tanzania; economic crisis. <sup>18</sup> Mukandala has documented the trends in the size of the Tanzania Civil Service. <sup>19</sup> Apart from the high, direct cost of its maintenance, decline in real and relative incomes, due respectively to inflation and the policy for equality, has resulted in the embezzlement of millions of shillings.

The effects of these two factors have been a scarcity of both consumption and investment resources, as whatever little is produced is drained away in the bad terms of trade and maintenance of the bureaucratic machine. Lack of investment has meant deterioration of technology to higher, labour-intensive levels (e.g. with the current scarcity of the hoe and bush knife in Tanzania). The result is diminishing returns to labour which, in effect, means one has to spend more labour to produce a given level of output. Such high demands for labour limits people to subsistence level production, as the case studies below will indicate. Relatedly, as no investment in land is made, the result is overworking it with consequences of soil erosion and exhaustion. This leads further into diminishing returns demanding more labour input—thus starting the vicious cycle of poverty breeding poverty. Threats of recurrent famines and a degree of desertification can be attributed to such a scenario.

Before one can point to any of the above factors as causing the population problem, a question still remains, however, as to the cause of the persistence of high fertility which was identified above as the variable of concern in rapid population growth.

### **The persistence of high fertility**

The continued high level of fertility, at a complete family size of 6 to 7 children (for a woman over 45 years), in the demographic transition of LDCs with poor economic conditions both at national and individual levels, has posed one of the many paradoxes of development in these countries. It is indeed such a situation that has made for the rationale of the frontal approach of the modern family planning movement based on the assumption that people want to limit their fertility, but lack the knowledge and the means to do so. However, KAP (knowledge, attitude and practice of family planning) surveys, mostly by the people in the same movement, have shown that people know the

traditional methods, but do not practice family planning for fertility limitation.

In this paper, careful investigation of the material conditions that people live in, shows that having a high number of children is crucial for survival. Evidence to that effect can be seen in study upon study of the value of children in LDCs. Notable ones have been, for example, in Africa, the Changing African Family Project directed by Caldwell that covered various countries, Nigeria in particular, in sub-Saharan Africa; in Asia, Cain on Bangladesh and White and Nag, White and Peet on Indonesia and Nepal.<sup>20</sup>

One drawback is that, these studies, with the exception of White's, do not go beyond the static fact of high values of children to the investigation of the factors underlying the continued high value. This is another point of departure on the population debate. It will be seen to be stagnant labour intensive technology, a point pioneered by Mamdani,<sup>21</sup> and intensification of sexual division of labour,<sup>22</sup> both casually connected with the factors of economic stagnation analysed above, that have made the high value of children motivate high levels of fertility.

### Stagnant technology and high fertility

The rationale for linking high fertility to technology is labour demand, and children as the best alternative source of supply.

The stagnation of technology at a labour intensive level and its exacerbation has been argued above. The pertinent point is the increasing high labour demand of the resulting diminishing returns to labour, to produce a constant level of output—mainly subsistence. These conditions are not mere theoretical suppositions, but are supported by micro-level small-holder farm studies in Africa, with labour shortage as one of the most significant observations. Notable examples are studies in various Anglophone African Countries put together, analysed by Cleave and amplified by Lele, and studies of annual and perennial cropping systems in Tanzania where farmers themselves have expressed shortage of labour as the most limiting factor to output.<sup>23</sup>

A crucial question for understanding high fertility as a response to labour demand is why people opt for children as the best alternative source of labour supply rather than using, for example, hired labour. It is because children can easily be controlled and their labour appropriated.<sup>24</sup> Effective control is ensured by a life-cycle mechanism; the older generation own the means of livelihood (existence) on which the young depend till they produce their own, an argument that Caldwell has unconvincingly seen as tortuous.<sup>25</sup>

It is not, however, such a mechanical system as it sounds; obedience, sense of dependency and gratitude are instilled by socialisation and legitimated and reified by ideology, ritual and myths. Far from being regarded by the young as exploitative, the system is kept relatively stable; hence its reproduction, it seems, by the fact of one day stepping into the shoes of the elders.<sup>26</sup> Together with being socialised, the young would not like to ruin the system that guarantees upward movement. All these factors explain the hierarchical and authoritarian system and ancestor-worship, found in peasant societies in contrast to an egalitarian system and individual autonomy among hunters and gatherers, for example, the Hadzabe, of north-central Tanzania, whose means of subsistence come virtually directly from nature.<sup>27</sup>

## **Sexual division of labour and fertility**

The processes that brought about the destruction and protracted stagnation of the economy, simultaneously intensified to a significant extent, the sexual division of labour. There are two pertinent factors for the persistence of high fertility; increased labour burden and creation of dependence of women on men.

### ***Increased woman's work load***

The development of long-distance trade, cash-cropping and labour migration, intensified the sexual division of labour by withdrawing males from the subsistence economy. The burden was thus superimposed on to women's already heavy labour demands of an increasingly backward labour-intensive technology, apart from their child-bearing, rearing and domestic functions.<sup>28</sup> The rationale for this is given by men who function as spokesmen for the community and hunting, rather than the women who took up these new activities.<sup>29</sup>

The increased labour burden for women has been documented in a pioneering work on women and development by Boserup and in other studies.<sup>30</sup> In many parts of Tanzania at one time, due to trade and labour migration, villages composed entirely of women, children and old men could be observed.<sup>31</sup> Their demographic effects shown by gaps in the age structure are still evident.<sup>32</sup> Southern Africa today is a continuing glaring example of this sex imbalance.<sup>33</sup>

Apart from taking over responsibility for subsistence production, women also work in cash-crop production, either on their husbands' plots or of their own, particularly in female-headed households.<sup>34</sup> Working in both economies has been observed in Bukoba District, Tanzania, where a woman becomes so tied up, even with the help of children, that she has leisure time for only 2 to 3 hours (about 20 per cent) of the 14 hour daylight time.<sup>35</sup> This is not pure leisure as it is usually for taking meals, washing and rest after work. A similar impression is given for Kenya's Kikuyu women by Reining, those of Western Kenya, and it is known for the Chagga of Kilimanjaro and Nyakyusa of South-Western Tanzania, all being coffee and/or tea cash cropping areas.<sup>36</sup>

A reliable relief of the labour burden, as argued above, is having children, hence the high fertility strategy. Many case studies, some of which have been cited above, show children providing a significant labour contribution. The only drawback in most of them is that no explicit and systematic link has been made with a woman's workload to fertility. Some studies have come close; as saving substantial amounts of time, which they put into farming, by delegating some domestic activities to children.<sup>37</sup> In Asia, contrasting results on the higher number of children as labour relief have been reported on Malaysia and the Philippines, but evaluated as tentative by Mueller.<sup>38</sup>

### ***Economic dependency***

One of the far-reaching effects of intensification of the sexual division of labour, parallel to the increased labour burden, has been the development of economic, and hence, general dependency of women on men. The origin of the problem was loss of economic autonomy; as they were relegated to subsistence production only, and in the process also destroying their crafts by either

systematic government prohibition or competition from manufacturers. With monetarisation, women became increasingly dependent on men for goods obtained only by cash. Market women, West Africa especially, have retained their autonomy as they control a substantial amount of trade, both local and external.<sup>39</sup>

That women had economic autonomy in pre-modern times is shown, for example, in Africa in anthropological studies edited by Paulme, for Tanzania by Mbilinyi and studies on hunter gatherer communities edited by Leacock and Lee.<sup>40</sup>

The development of female economic dependency is more dramatic where an illiterate or low educated woman is married to a more educated man with a white collar job, or when her (cash) income is insignificant compared to the standard of living her conjugal family leads. The situation is well put by Ware, although referring only to an educated wife. If she cannot find "...an employment which does not lower her status or reflect poorly on her husband... she may well find that she has no money of her own. For such women their status can become a prison and their hold upon the modern world depends on their husbands"<sup>41</sup> This situation has been observed in Ghana by Oppong.<sup>42</sup>

The link between dependency and fertility comes about as a woman adopts a reproductive strategy to achieve economic security. Having children ensures security in two ways; first, "giving" children to her husband stabilises her relationship with him as she provides an economically and socially valuable item. Second, a stable relationship still has a degree of risk for he can still divorce her or, if he dies, she does not inherit property. Therefore, having her own children provides a more secure source of economic security.

Some evidence of the relationship between dependency and economic security exists. The usual inverted U-shape pattern of fertility with education, with women who have completed primary school showing the highest fertility indicates this effect.<sup>43</sup> In a case study of Wasukuma of Mwanza region, a multiple classification analysis with control on age shows women with lower education *cum* occupation status than that of their husbands having higher fertility than when spouses are of equal status.<sup>44</sup>

The above analysis also shows that fertility desires are not the same, not only at macro national levels where a decline is beneficial and micro household levels, but also, within the household as women have been shown to have extra need for children.

### Summary and conclusions

The demographic transition in underdeveloped countries was marked by a rapid decline in mortality while fertility persisted at a high level, resulting, therefore, in increasing population growth rates. This does not mean that the population then began overrunning resources. Historical accounts and their analysis show that it was destruction of the original self-sustaining economic base, through the processes of long-distance trade and colonial occupation by introduction of foreign fatal diseases, procurement of cheap labour and low prices of commodities, that actually led, at first, to the decline of the population, and, together with recent high cost of bureaucracy, as in Tanzania, has denied the local economy investment resources, resulting in stagnation of the economy, particularly technology at a labour intensive level. The results have been diminishing returns to land and labour with

consequences of recurrent famines and threats of desertification. It was, therefore, not from population growth that problems of development we see today originated.

Population growth could have received blame due to the persistence of high fertility. However, this has also been traced to the increasing high labour intensity of technology and diminishing returns, resulting from the above destruction and stagnation factors. This demands higher labour inputs to produce a given level of output. Case studies on small-holder farms have, in fact, shown serious shortages of labour. Having children, is the best alternative source of labour because children can be easily controlled and their product appropriated. The basis for control is the older generation's possession of the basic means of subsistence upon which the young depend.

The need for children has been further intensified by the development of the sexual division of labour, from the same process that led to the destruction of the economic base as it withdrew male labour from the indigenous economy, thus increasing the labour burden of women. Further, as women were relegated to subsistence production and money income was placed into male hands, women depended on the latter for goods obtained only by cash. Women are seen to adopt a reproductive strategy, whereby children help with the labour burden and assure economic security from dependency.

The whole population problem, therefore, has been traced to economic, particularly technological stagnation at a labour intensive level. A solution to the problem is therefore implied by the introduction of less labour intensive technology. This has far-reaching effects on both resource availability and possible decline in fertility, hence killing two, though related, birds with one stone.

Improvements in technology would enhance total output and thus raise the standard of living, a universally cherished desire. This technology would erode the high value of children in two ways; first by demanding less labour; second, it would raise the cost of children because the process of imparting that technology and general desire for modernisation would require modern education. Attendance at school would minimise the time children are available for work and would require parents to meet direct costs of uniforms, fees, etc. Under such conditions, there would be no reason why people would not limit their fertility using all possible avenues; postponement of marriage, contraception, whether traditional or modern, etc.

Of course, there is a possibility of fertility decline without significant economic growth (of resources) as in Kerala, although the increased costs of children due to education has been one of the main factors for the decline.<sup>45</sup> However, the introduction of education, with its effect on fertility as the only goal, without investing in other sectors would not only be morally unacceptable but, importantly, it would still have a high degree of uncertainty, mainly because the key variable of fertility, namely technology, would not be affected.

The role of the labour intensity of technology in determining fertility has only been argued. It still needs empirical testing, hence the priority importance of research. There are also other, non-material values of children, like prestige, fulfilment etc., that should be examined. I tend, however, to view these as only expressing the underlying economic values.

How and where to get resources to build up the new technology, is one question that has received increasing attention. For example, technology transfer and appropriate technology are important issues in the current development debate, but beyond the scope of this paper.

## NOTES

1. *United Nations, 1974 Report on the World Social Situation s* (New York: 1979)
2. A.J. Coale, and E.M. Hoover, *Population Growth and Economic Development in Low Income Countries*, (Pinceton: Princeton University Press, 1958).
3. The Coale-Hoover school has not stood without controversial debate—It was indeed the mainspring of the modern population debate. The main challenge came from the celebrated Ester Boserup (1965) thesis that contrastingly puts population growth and pressure on resources as the main push to invention. However, the diminishing returns to labour would lead to a developmental dead-end; the thesis is, therefore, untenable. In his article "Farm labour and the evolution of food production" in B. Spooner (ed.), *Population Growth: Anthropological Implications* (Cambridge, Mass: MIT Press, 1970), Bronson gives evidence from ancient China that provides contrasting evidence to Boserup. For other criticism of Boserup see R.C. Blitz's review of Easter Boserup in *Journal of Political Economy*, Vol. 75, (1987), pp. 212-213; and W.O. Jones' review of the same in *American Economic Review*, Vol. 57, 1967, p.679.
4. Current problems in providing services to increasing numbers seems to have changed the attitude even of African countries. This was apparent at the virtually one-sided debate at the Second African Population Conference held in Arusha Tanzania from 9 to 13 January, 1984. Most African countries have long resisted the population villain thesis and stressed the need for socio-economic development first, as for example shown at the First World Population Conference in Bucharest, 1974.
5. There is an increasing number of demographers who recognise the destruction of natural resources through commercial exploitation as one of the major factors of current development problems. See, for example, R. Repetto, and J. Holmes, "The role of population in resource depletion in developing countries." *Population and Development Review*, Vol. 9 No. 4, (1983), pp. 630-632.
6. United Nations, *Determinants and Consequences of Population trends*, (New York: 1973).
7. Although mortality has declined rapidly, since the 1950's, it has, however, decelerated and, in many cases, stabilised, while still at a relatively high level. See D.R. Gwatkin, "Indications of change in developing country mortality trends; the end of an era?" *Population and Development Review*, Vol. 8 No.3, (1982), pp. 567-688, as compared to now a further decline in developed countries as shown by trends in United States in E.M. Crimmins, "The changing pattern of American mortality decline, 1970-77, and its implications for the future." *Population and Development Review*, Vol. 7 No. 2, (1981), pp. 229-254.
8. The paper draws on the history of Tanzania to be found in the well-researched works by H. Kjekshus, *Ecology Control and Economic Development in East African History*, (London Heinemann, 1977); and J. Iliffe, *A Modern History of Tanganyika*, (London: Cambridge University Press, 1979); which are concisely synthesized by D.F. Bryceon, "Changes in peasant food production and food supply in relation to the historical development of commodity production in pre-colonial Tanganyika." *The Journal of Peasant Studies*, Vol. 7 No.3, (1980), pp. 281-311.
9. This is by no means intended to glorify the past, but the statements' importance is the assessment of the origin of the population problem.
10. The writer has seen with his own eyes the by-products of past iron smelting in his home village, Kigarama (Bukoba District). These are black sponge-like stones that can be seen at Ngerero, now used for housebuilding. The writer has also met Dr. Peter Schmidt (June 27, 1984 at Bukoba Airport), the archeologist who has uncovered and dated the time the technique was in use (cited in Iliffe, *op. cit.*).

11. Khalatbari has also traced the population problem to economic stagnation. See his article "Some aspects of overpopulation and underdevelopment in developing countries," in U. Stolte-Heiskanen (ed.), *Population and Underdevelopment*, (Helsinki: IDS, 1977), pp. 724.
12. See Kjekshus, *op. cit.*, and Iliffe, *op. cit.*
13. *Ibid.*
14. United Republic of Tanzania, *Price Policy Recommendations for 1981/82 Agricultural Price Review* (Dar es Salaam: Min. of Agriculture, Market Development Bureau, 1980); J. Boesen, and A.T. Mohele: The "Success Story" of Peasant Tobacco Production in Tanzania: The Political Economy of a Commodity Producing Peasantry. (Uppsala: Scandinavian Institute of African Studies, *Centre for Development Research Publication*, No. 2, 1979); Elis, F.; "Agricultural Price policy in Tanzania." *World Development*, Vol. 10 No. 4, pp. 263-283.
15. In the case of Kenya see A. Odhiambo, "The rise and decline of the Kenya peasants 1888-1882." *East African Journal*, Vol. 9, (1973), pp. 11-15; for South African case see C. Burdy, "The Emergence and decline of a South African peasantry." *African Affairs*, Vol. 71, (1972), pp. 369-388; and R. Palmer and N. Parson (eds), *The Roots of Rural Poverty in Central and Southern Africa*, (Berkeley: University of California Press, 1977), for the case of Central and Southern Africa.
16. S. Hymer, and S. Resnic, "A model of an agrarian economy with non-agricultural activities." *American Economic Review* Vol. 59 No. 4, Part I, (1969), pp. 493-500.
17. Z. Ergas, "The state and economic deterioration: The Tanzania case." *Journal of Common wealth and Comparative Politics*, Vol. XX No. 4, (1982)
18. S. Chodak, "Peasants and Agricultural change," review of K.R.N. Anthony *et. al* and D. Leonard in *Canadian Journal of African Studies* Vol. 14 No. 3, (1980) pp. 529-533.
19. R. Mukandala, "Trends in civil service size and income in Tanzania, 1967-1982." *Canadian Journal of African Studies*, Vol. 2 No. 2, (1983), pp. 253-263
20. J.C. Caldwell (ed.), *The Persistence of High Fertility: Population Prospects in the Third World*, (Canberra: ANU, 1977); M.T. Cain, "The economic activities of children in a village in Bangladesh." *Population and Development Review*, Vol. 3 No. 3, (1977), pp. 201-227; M. Nag, B.N.F. White, and R.C. Peet, "An Anthropological approach to the study of the economic value of children in Java and Nepal." *Current Anthropology*, Vol. 19 No. 2, (1978), pp. 293-306.
21. M. Mamdani, *The Myth of Population Control: Family Caste and Class in an Indian Village*, (New York: Monthly Review Press, 1972). Other case studies can be seen in K.L. Michaelson, (ed.), *And the Poor Get Children: Radical Perspectives on Population Dynamics* (New York and London: Monthly Review Press, 1981); B.N.F. White, "Child labour and population growth in rural Asia." *Development and Change*, Vol. 13 No. 4, (1982), p. 587.
22. L. Beneria, and G. Sen: "Accumulation, reproduction and woman's role in economic development: Boserup revisited." Special issue on Development and the Sexual Division of Labour Signs: *Journal of Women in Culture and Society*, Vol. 7 No. 2, (1981), pp. 279-298; N.H. Youssef, "The inter-relationship between the division of labour in the household, women's roles and their impact on fertility" in R. Anker *et. al.* (eds), *Women's Role and Population Trends in the Third World*, (London: Croom and Helm, 1982), pp. 173-201.
23. See J.H. Cleave, *African Farmers: Labour Use in the Development of Smallholder Agriculture*, (New York: Praeger Publishers, 1974); U.J. Lele, *The Design of Rural Development*, (Baltimore: John Hopkins University Press, 1975); H. Ruthernbarg, (ed.), *Smallholder Farming and Smallholder Development in Tanzania*, (London: C. Husst and Co., 1968); C.L. Kamuzora, "Constraints to labour time availability in smallholder agriculture: the case of Bukoba District, Tanzania," *Development and Change*, Vol. 11, (1980) pp. 123-135. Existence of shortage of labour thus refutes the one-time accepted classical generalisation of surplus labour (and leisure) advanced, among others, by W.A. Lewis, in his "Economic development with unlimited supplies of labour." *The Manchester School*, reprinted in A.N. Agarwala and S.P. Singh (eds.).

- The Economics of Underdevelopment* (New York: OUP, 1963), pp. 400-449; and J.C.H. Fei and G. Ranis. "A theory of economic development." *American Economic Review*, (1961), pp. 533-565.
24. Maridani, *op. cit.* An alternative explanation for use of family labour has been given by W. Barber, "Some questions about labour force analysis in agrarian economies with particular reference to Kenya." *East African Economic Review*, Vol. 2 No. 1, (1966), pp. 23-37, who argues that households simultaneously demand labour at peak seasons. However, relative returns must be the guiding factor, hence Barber's explanation is untenable.
  25. C. Meillassoux, "From reproduction to production: a Marxist approach to economic anthropology." *Economy and Society*, Vol. 1, (1972), pp. 93-105; Meillassoux, "The social organisation of the peasantry: the economic basis of kinship." *The Journal of Peasant Studies* Vol. 1 No. 1, (1973), pp. 81-90; J.C. Caldwell, "A theory of fertility: from high plateau to destabilisation." *Population and Development Review*, Vol. 4, No. 4, (1978), pp. 553-577.
  26. Caldwell, "A theory of fertility," *op. cit.*
  27. In contrast, is also apparent loss, even abdication, of parental control on children who have gone to school and have, therefore, alternative, independent employment opportunities in the modern sector. This has been observed for example in south India by Caldwell. See Caldwell *et. al.*, "The causes of demographic change in rural India." *Population and Development Review*, Vol. 8 No. 4, (1982), pp. 689-727.
  28. A. Seidman, "Women and the development of underdevelopment: the African experience." In R. Dauber and M.L. Cain (eds.), *Women and Technological Change in Developing Countries* (Boulder, Col.; Westview Press, 1981), pp. 109-126; M.J. Mbilinyi, "The 'New Woman' and traditional norms in Tanzania" *The Journal of Modern African Studies* Vol. 10 No. 1, 1972, pp. 57-72.
  29. S. Afonjo, "Changing modes of production and sexual division of labour among the Yoruba." Special issue on Development and Sexual Division of Labour in Signs: *Journal of Women in Culture and Society*, Vol. 7 No. 2, (1981), pp. 299-313.
  30. E. Boserup, *Women's Role in Economic Development*, (London: Allen and Unwin, 1970).
  31. Kjekshus, *op. cit.*, Iliffe, *op. cit.*, Bryceson, *op. cit.*
  32. B. Egero, "Migration and underdevelopment: A general discussion with examples from Africa and Tanzania," in V. Stolte-Heiskanen (ed.), *Population and Underdevelopment*. (Helsinki: Institute of Development Studies, University of Helsinki, 1977), pp. 25-50.
  33. R. Palmer, and N. Parsons (eds.), *The Roots of Rural Poverty in Central and Southern Africa*, (Perkeley: University of California Press 1977).
  34. Households headed by females are increasingly significant in number; in rural Kenya for example, they were observed to be 24 per cent in an ILO study. See ILO, *Employment Problems of and Rural Women in Kenya*, (Addis Abbaba; ILO/JASPA, 1981).
  35. Kamuzora, "Constraints to Labour," *op. cit.*
  36. P. Kongsted, and M. Monsted, *Family Labour and Trade in Western Kenya*, Uppsala: Scandinavian Institute of African Studies, 1980; P.C. Reining, "Social factors and food production in an East African Society: The Haya." in P. McLoughlin (ed.): *African Food Production Systems*, (Baltimore: Johns Hopkins University Press, 1970), pp. 42-55.
  37. Reining, "Social factors," *op. cit.*
  38. E. Mueller, "The allocation of women's time and its relation to fertility" in R. Anker *et. al.*, (eds.), *Women's and Population Trends in the Third World*, (London: Crown Helm, 1982), pp. 55-86. Vlassof found no relation between children's work and actual and desired fertility of males in India. However, his data is beset with methodological drawbacks; one of them is that in a society where everybody works, no relation will be found. See his "Economic utility of children and fertility in rural India." *Population Studies*, Vol. 36 No. 1, (1982), pp. 45-59.

- For other points of criticism see B.N.F. White, (ed.), "Children Workers," Special issue of *Development and Change*, Vol. 13 No. 4 (1982)
39. Mona Etienne provides a good case study of the Baule (Ivory Coast) women and their struggles to keep autonomy. See her "Women and men, cloth and colonization: the transformation of production-distribution relations among the Baule (Ivory Coast)." *Cahier ed'Elute Africaine*, Vol. 65.
  40. See D. Pauline (ed.), *Women of Tropical Africa* (London: Routledge, and Kegan Paul, 1963); Mbilinyi, *op. cit.*, and E. Leacock, and R. Lee "Introductions," in Leacock and Lee (eds.), *Politics and History in Band Societies*, (London: Cambridge University Press, 1982).
  41. *Ibid.*, p. xv.
  42. Ware, *Women, Education and Modernisation, op. cit.*
  - 43 R.A. Henin, "Fertility differentials by marital condition education, religion and occupation," in R.A. Henin (ed.), *The Demographic Survey of Tanzania: An Analysis of the 1973 National demographic Survey of Tanzania*, Vol. VI (Dar es Salaam: Bureau of Statistics, n.d.).
  44. C.L. Kamuzora, "The process of fertility determination in Africa: a case study of pregnancy history of rural and urban Wasukuma of Tanzania." Research report, (Canberra: Department of Demography, ANU, 1983).
  45. K.C. Zachariah, *Anomaly of the Fertility Decline in Kerala* (Washington D.C: World Bank, Health and Nutrition Department, Report 1, 1983).