

Household livelihood adaptation in a high population density area in Ethiopia: The case of Wolaita Zone.

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1. Background to the Problem

The interface between population and development has been a subject of varied interpretations in development thinking for a long time. The Malthusian position states that population growth causes resource scarcity leading to economic decline and poverty. The Boserupian position, however, regards population growth as a favourable condition to develop new technologies and intensify production that would ultimately result in development. Evidence with regard to these two positions is mixed. It seems that the pace of population growth and the role of other scope modifiers such as type of the economy and the institutional variables are all important.

Ethiopia has been experiencing unprecedented population growth in its recent history. The country's population has increased from an estimated 19.6 million in 1950 to 70.7 million in 2003, an increase by 51.1 million people in a span of 53 years. If the current growth rate of 2.7% continues, the population will reach 117.6 million by 2025, a mere 21 years away, and 173.3 million by 2050 (PRB 2003). In other words, Ethiopia will join the top ten most populous countries of the world by the middle of the current century. Even though the advantage of population as a resource is evident, rapid growth has tremendous implications for development, the capacity to provide basic services, attain the goals of food security and poverty reduction for a country with limited resources.

Ethiopia is an agrarian country where small-scale peasant producers predominate production. About 85% of the total population live in rural areas, 90% of which depend mainly on crop production for its livelihood. Household access to agricultural land has become a growing problem due to population growth. Average holding is diminishing as plots are subdivided to accommodate newly married sons while the number of landless households is also rising. Often, production takes place on small and fragmented farm plots. Continuous parcelling, diminution of holdings and landlessness are expected to increase under the prevailing rapidly growing population.

Yet agriculture forms the backbone of the national economy, 95% of total production coming from small producers. But small-scale traditional production has come under pressure, questioning its capacity to cope with the problems of livelihood construction, food security, and environmental protection and poverty reduction. In this connection one questions the extent to which the goals of attaining food security, poverty reduction and the provision of basic services can be achieved if population continues to grow rapidly. Given that population

and development have reciprocal effects on each other and population growth rate is already high, what prospect is there for economic growth and development? Will rapid population growth serve as a precursor to growth and development? How do households cope with pressure on their land? Households may respond in certain ways when faced with resource scarcity. Mechanisms adopted to meet every day needs may vary from household to household depending on their resource endowments. An important aspect to household adaptation mechanisms is the role of the policy and institutional environment in the process. The present study intends to contribute to the understanding of the livelihood strategies of rural people in the face of pressure on their most basic resource, agricultural land.

Introduction to the study area

The study will be conducted by taking Wolaita Zone as a case. The Zone is located in the south-central part of Ethiopia, and is sub-divided into seven districts, namely, Boloso Sore, Damot Gale, Damot Weyde, Humbo, Kindo Koysha, Offa and Sodo Zuria (Fig.1). Wolaita Zone represents one of the most densely populated parts of the country. According to the Socio-Economic Profile of Wolaita Zone (Wolaita Zone Finance & Economic Main Department 2003), average population density (crude) for the Zone was about 342 persons per square kilometre, though it may rise well over 500 persons/km² for some of the districts. Damot Gale (664 persons/km²), Sodo Zuria (596 persons/km²), Bolosso Sore (527 persons/km²) and parts of Kindo Koisha (for the whole district 210 persons/km²) and Damot Woyde (for the whole district 240 persons/km²) are densely populated. There are, however, districts with relatively lower densities. These are Humbo (133 persons/km²), Offa (261 persons/km²) and parts of Kindo Koisha and Damot Woyde. Currently, Wolaita Zone is one of the most food deficient parts of the country.

Altitude in the Zone ranges between 1500 and 2500 m except for some parts where it falls below 1500 m. Rainfall occurs in two distinct rainy seasons, '*kremt*' rains (also called the 'big rains') occurring in summer (roughly June, July and August) and '*belg*' rains (also called the 'small rains') occurring in spring (roughly the mid-February to mid-May period). *Kremt* is the main production season, but the occurrence of rain during the *belg* season is equally important as it has implications on the food security of the households. Mean annual rainfall in the area varies between 800 mm and 1400 mm. Average temperature varies between 15 and 20 °C in the Zone.

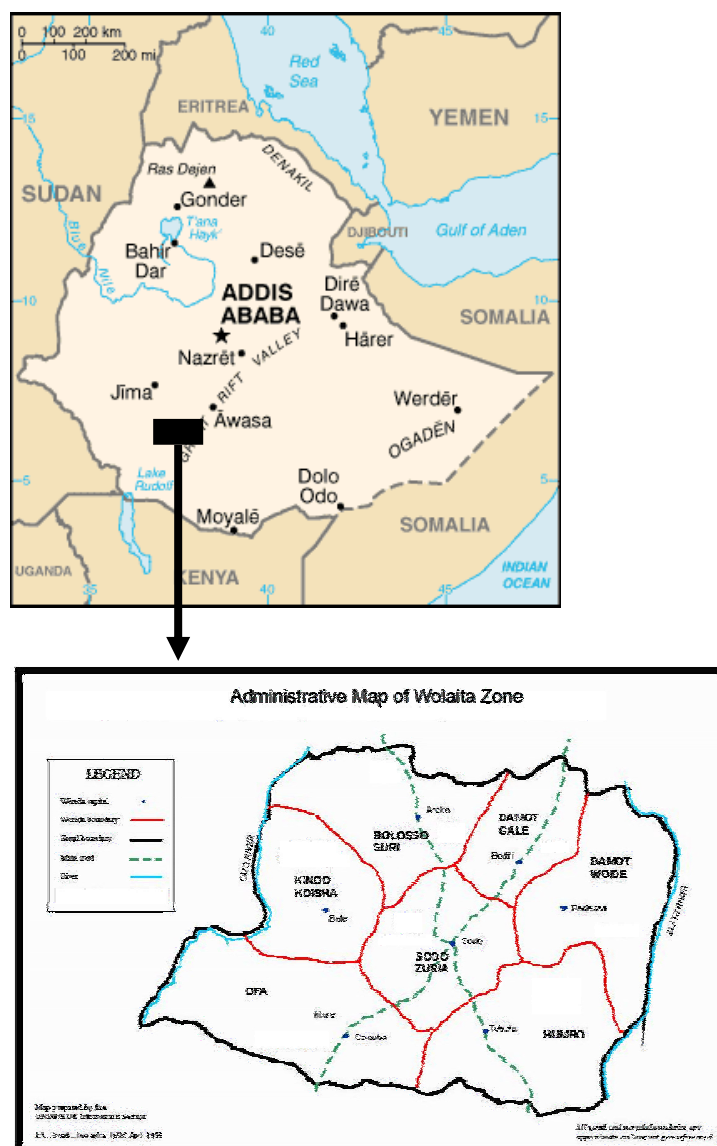


Fig. 1. Location of Wolaita Zone, Ethiopia

The major soil types found in the Zone are Nitisols, haplic Yermosols, eutric Cambisols, orthic Andisols and calcareous Fluvisols (ONCCP/RPOSE: 1985). A major road passes through the region to Arba Minch to the south, and all of the districts are connected to Wolaita Sodd (the regional capital) by feeder roads.

Mixed farming involving the production of cereals, root crops, *enset* (*enset ventricosum Welw*), coffee, etc. are practiced. In the 1997/8 production year households which had a holding of one hectare and below in the Semen Omo Zone, of which Wolaita was a part then, accounted for 90.4% of the total (CSA: 1998). Different types of livestock are also kept. Pressure on the land due to increasing density of both human and livestock population is high. A World Bank funded project, the Wolaita Agricultural Development Unit (WADU) was operational in all parts of the Zone from 1970-82. Its chief objective was improvement of

agricultural production through a wide variety of extension services, expansion of rural roads, water development and conservation.

2. Statement of the Problem

The problem of rising rural population and the intergenerational subdivision of agricultural land in the absence of major non-farm pull factors have resulted in growing rural poverty, food insecurity and environmental degradation in Ethiopia. In its Sustainable Development and Poverty Reduction Program (SDPRP), the Ethiopian government singles out poverty reduction as its core objective, which it aims to achieve by focusing on agriculture, because agriculture 'is the source of livelihood for 85% of the population where the bulk of the poor live' (MoFED 2002). There is a growing understanding among researchers that useful lessons with wider policy implications on rural development, poverty reduction and food security can be drawn from the survival strategies of rural people themselves. Investigating the array of decisions that households take to enhance livelihood when faced with pressure on their resources is thought to provide valuable insights and factual inputs for rural decision making and planning.

Nevertheless, knowledge on farm household responses or adaptation mechanisms to rising pressure on land in Ethiopia is scanty and fragmented. Research work on household livelihood strategies and activities under a condition of resource scarcity in the country is limited. There is a need to study the effects of macro level policies and institutional arrangements on micro level livelihood construction activities. There is no adequate information on the gender dimensions and the effects of demographic dynamics on household livelihood construction. The identification of the key assets and activities used by the rural people to gain a living has relevance to poverty reduction strategy. This study aims to contribute to the understanding of these issues.

3. Objectives of the Study

The main objective of this study is:

To analyse household livelihood adaptations and conditions of living in an area of high population density as represented by the Wolaita Zone, Ethiopia.

The specific objectives are:

- a. To analyse past and present government policies with reference to agriculture and rural livelihood security.
- b. To investigate household adaptation mechanisms under condition of high population pressure on agricultural land.
- c. To assess fertility condition and behaviour in the zone*
- d. To investigate the contribution of social cooperation in handling funeral and wedding ceremonies and their effects on livelihoods*

* later additions

4. Research Questions

I. Research questions on policies

- a) What were the major rural policies and what did the state aim to achieve with these policies in the three different phases in recent Ethiopian history? (Policies on land use and land tenure, agricultural marketing, input supply, research, extension, technology transfer, credit, and investment in physical and social infrastructure)
 - i) **Monarchist Phase** (1950-1974) represents the final phase of the imperial rule in Ethiopia. It was an absolutist state where feudal relation dominated with little investment in rural development. Nevertheless, the period is important because modern rural intervention, however small it was, started during this time.
 - ii) **The Derg or “socialist” Phase** (1975-1991). This was a government, which declared socialism after overthrowing the feudal state. All land was made public property and accessible to the peasants but the state extended its institutional structure in the form of peasant associations subordinating the socio-economic life of the rural people to its centralized authority. The peasant associations became the instrument of the state in the appropriation of surplus from the peasants. State control over rural producers became more direct and structured than the previous phase.
 - iii) **Post Derg Liberalization Phase** (after 1991). The government in power has declared free market economy after overthrowing the Derg regime in

1991. It is based on a multi-ethnic party structure allowing some space for opposition. The economy is opening and public investment in rural infrastructure has shown modest increase. Nevertheless the state-peasant relationship is still reconstituted.

- b) Are there similarities and differences in the focus of policy directions?
- c) Are there continuity/discontinuity and shift of attention of policies by succeeding governments? With what consequences?
- d) What could be the effects of these policies on household decisions to intensify production and diversify livelihood?
- e) What is the farmers' perception of the role of the state at different times regarding their livelihoods?
- f) How was the nature of state-peasant relations at the different phases?

II. Research questions on household livelihood Adaptation

- a) Does household livelihood adaptation vary by the following characteristics?
 - i) Farm size
 - ii) Household size
 - iii) Between high and low-density areas in the Zone
- b) Are livelihood diversification and farm labour related to family size?
- c) How do households respond to increasing pressure on their land?
 - i) What are the major household assets?
 - ii) How is assts constructed in the study area?
 - iii) What is the contribution of gender to household livelihood security?
 - iv) What are the favourable/unfavourable factors to livelihood construction in the Zone according to the households?
 - v) Is a particular activity fundamental to household livelihood security? Or all on-farm, non-farm and off-farm activities are equally important?
 - vi) What livelihood strategies are employed as a result of increased pressure on land? Is it agricultural intensification, livelihood diversification or both? And with what effect?
 - vii) What is the contribution of migration and remittance to household livelihood?
 - viii) How does seasonality affect livelihood security in the Zone?

III. Research questions on production and land use practices

- a) What are the major food crops?
- b) What are the major cash crops?

- c) How is access to farmland in the Zone?
- d) Has access to land changed over time, in terms of farm size? How?
- e) How do farmers react to shortage of agricultural land?
- f) Is there change in cropping pattern, crop choice, adoption of technologies, and frequency of cultivation?
- g) How important is the use and costs of animals in the Zone? How important is animal traction power to production in the Zone?
- h) Has there been change in land use practices over time as a result of pressure on land?
- i) What land management and improvement practices have farmers adopted as a result of pressure on land?
- j) What is the farmers' perception of incentives/disincentives by the government to protect soil from erosion and improve its quality

IV. Research questions on demographic characteristics

- a) How is population change through time in the Zone?
- b) How is population change seen at community level?
- c) How do households perceive family size?
- d) What are the underlying causes for large family in the Zone?
- e) Are there differences between how husbands and wives view family size and family planning?
- f) How do the household size and age structure for study area compare to the corresponding national figures?

5. A Review of Theoretical Positions and Empirical Evidence

The interaction between population, agricultural change and environment is a subject of concern and investigation since the times of Malthus. There are differing outlooks and contradictory research outcomes on the issue. The Malthusian (following Malthus 1798) projection of the interaction is pessimistic. Population has the potential to surpass food production impeding agricultural change and resulting in famine, poverty, land fragmentation and environmental deterioration. The Malthusian theory has since undergone development by the Neo-Malthusians who have responded to the critics. Neo-Malthusians argue that the natural system that provides for food, raw materials, fossil fuels, and the ecological system that supports life and absorbs wastes have limited capacity and, rapid growth in human population and its activities are threatening it with damage and destruction (Meadows et al

1972, Ehrlich, Paul 1972, Ornstein, Robert E. and Paul Ehrlich 1991, Ehrlich, Paul and Anne H. Ehrlich 1970, Garret Hardin 1998, Lester Brown 2003, 1996, 1995, 1994).

In contrast, the Boserupian (following Boserup 1965 and 1981) position maintains positive outcomes. High population density impels intensification technologies that enhance agricultural productivity. According to this view increasing population densities, by inducing intensive use of land and through the development of market forces can lead to greater agricultural production. Hence, the population issue gives rise to its own solution. For instance, Tiffen et al (1994) demonstrated a positive interaction between rising population, environmental conditions and agricultural production in the Machakos district of Kenya. Similarly, neoliberal economists regard the issue positively given that appropriate economic structure that provides reward for intensifying production, specialization and facilitates entry into free markets is made available (Schultz 1964, Mellor 1966).

Several studies (Pingali et al 1987; Pingali and Binswager 1987; Kates et al 1993; Tiffen 1995) have confirmed one of Boserup's main conclusions; that, population growth may lead to land intensification resulting in increased production. But this does not mean that it results in increased labour productivity (Cuffaro 1997). Cuffaro lists the other shortcomings of the Boserupian thesis as follows: (1) the thesis overlooks distributional and entitlement aspects; (2) it focuses on technology transmission when some of the technologies are location specific; (3) it does not have a clear cut view on the place of institutions; and (4) it focuses only on low-input agriculture. Furthermore, the Boserupian thesis is criticized for (5) considering intensification in terms of yield increase only (not in terms of shifts from low to high value crops and geographical shifts from areas of low potentials to areas of high potentials) and for (6) its focus on slow processes of adaptation neglecting some possible critical implications of the rapidity of changes and/or the already high densities in contemporary poor countries.

Different writers define agricultural intensification in several ways. Boserup (1965) sees agricultural intensification as a gradual change of the cropping of a given area of land more frequently than before, such as a progressive change in a fallow system from long fallow to short fallow, then to annual cropping and to multiple cropping. Turner & Doolittle (1978) see agricultural intensification in terms of the frequency of cultivation and the type and number of agro- technologies used while Brookfield (1984) (also Boserup 1965) defines it as an increase in the amount of labor per hectare of land. Increased utilization or productivity of land currently

under production (Kates et al 1993) and increased average inputs of labor or capital on a smallholding (Tiffen et al 1994) are other definitions given to agricultural intensification. Lele and Stone (1989) propose that a shift to crops of higher value or higher yields, or, to more productive land should also be considered as intensification of agriculture. In general, an agricultural activity directed at the increased utilization or productivity of land currently under cultivation either through the increased use of inputs (labor and/or chemical fertilizers) or a shift to crops of higher value or yields can be considered as an indication of intensification of agriculture.

Intensification of agriculture as a possible development avenue for developing countries facing rapid population growth, therefore, warrants investigation (Kates et al 1993). Along with livelihood diversification^{*}, agricultural intensification is a key livelihood strategy that rural households pursue in order to achieve livelihood security in developing countries (Ellis 2000, Scoones 1998). The high population increase that is evident in sub-Saharan Africa can lead to intensification of agriculture (Kates et al 1993). But there are three critical issues that seek serious consideration:

- (1) The question as to what extent the intensification process must be complemented by active public policy to attain broad-based agricultural development in view of the decreasing frontier and the questionable role of market forces alone to induce a productivity-enhancing process in the face of rapid population growth (Lele and Stone 1989)
- (2) Intensification may result in the unfavorable outcome of involution and diminution of economic and social well-being or threaten sustainability through environmental deterioration (Kates et al 1993, Lele and Stone 1989). This could be the case especially when intensification occurs with already high densities and/or when fast population growth is accompanied by poverty (Cuffaro 1997).
- (3) Can the “Boserup Responses” keep up pace with population growth?

The key issue is to be able to identify and exploit situations that may lead to the positive conditions of intensification (agricultural growth) against those that lead to negative conditions (involution, stagnation and environmental deterioration). The most important policy focus is, therefore, how to effect synergies or complementarities among the goals of economic growth, environmental sustainability and poverty alleviation in the wake of agricultural intensification (Lee et al 2001).

^{*} ‘A process by which rural households construct an increasingly diverse portfolio of activities and assets in order to survive and to improve their standard of living’ (Ellis 2000)

Research findings from a number of case studies indicate that high population density may possibly lead to agricultural growth through intensification or results in agricultural stagnation, involution and environmental degradation (Kates et al 1993). The central factor is the pace at which population grows.

Hyden et al (1993) have undertaken ten case studies clustering in the high population densities of the highlands of East Africa (Bushenyi in Uganda, Meru and Kisii in Kenya, Usambara in Tanzania, and Ruhengeri in Rwanda) and in Nigeria (Jos Plateau, Imo, Ngwa-Igbo, Awka-Knewi and Kano). Their findings show that intensities of agriculture are high and increasing, and farmers in almost all sites use new cultigens and biotechnic inputs. Increased labor and capital inputs and increased cropping frequency are observed everywhere. Yields are improving, and, as a result there is increase in total agricultural production in eight of the ten sites. Not only market production is occurring but also the marketed proportion is increasing. Economic diversification and out migration are observed throughout the sites.

Hyden et al (ibid), based on their findings and drawing on earlier works on the subject (Cleave 1974, Pingali et al 1987 for Pan-Africa; Gleave & White 1969, Netting et al 1980 for West Africa; Haswell 1953, Grove 1961, Mortimore 1967, Benneh 1972, and Norman 1974 for Sahelian Africa), conclude that there is positive relationship between population growth, increased density and intensity of agriculture. They also cite other evidences of positive relations from the Tiv of Nigeria (Vermeer 1970), the Matengo of Tanzania (Basehart 1973), and the Jos Plateau of Nigeria (Netting 1968) The relationship is also consistent for many parts of the world on several studies that comprise for regional level comparisons (Dalrymple 1971; Turner, Hanham, and Portararo 1977); for Highland New Guinea (Bookfield 1962; Brown and Podolefsky 1976); for intra-village comparisons in Central America (Bartlett 1976); and for Southeast Asia (Sahlins 1971).

Contrary relationship between population growth, increased density and intensity of agriculture, however, was found for few studies. These are Metzner's (1982) findings on the Isla de Flores; Richards' (1985, 1987) findings for parts of West Africa; Datoos' (1976) findings for the Uluguru Mountains of Tanzania; and Lele & Stone's (1989) findings for Cameroon, Tanzania, Senegal, Kenya, Malawi, and Nigeria.

In the study of the six African countries cited above, Lele & Stone (1989) found that population growth has not led to agriculture growth. According to them, this is not surprising because, while conventionally intensification is expected to take place in an evolutionary

process (under conditions of low population density and slow population growth), these nations, and most of Africa, are in reality experiencing very rapid population growth. They hold that, given the circumstances of rapid population growth or/and already high densities, policy-led approach to intensification is more relevant and practical. To achieve growth in agricultural production it is important to focus resources and policy attention in areas most responsive to chemical fertilizers and improved seed.

According to Lele and Stone (ibid) the presence in Africa of more fragile soils, declining rainfall, unprecedented population growth rates and the large inequity gap between the mass of smallholders and a few politically powerful sections of the population make exclusive dependence on the market for achieving rapid growth in productivity questionable. Hence, there has to be a policy-directed intervention in the areas of redefining land policy, stabilizing production and consumption policies, targeting crop research, improving rural physical and social infrastructure, accelerating fertilizer use, extending credit, granting access to export markets and rethinking population policy.

Lele and Stone have touched upon the importance of policy but their discussion fail to go beyond a technical level. Policy is an outcome of political forces and reflects interests and relations. It is a form of political power (Nustad & Sending 2000) and a product of a political process and power relations at the macro level. However policy-making takes collective and universal guise, its formulation is remote from and alienates the masses of the people (Shore & Write 1997). For this reason, it is important to address the issue of policy with due recognition to its political-economic dimensions. Hence intensification has to be related to the overall policy and institutional environment. In the case of Ethiopia, household responses to high population density cannot be understood without reference to the wider policy environment. Government policy since the Imperial days through the years of the socialist regime has disregarded the importance of rural agricultural development, especially infrastructural development and the enhancement of population welfare and resource development. There was continuous transfer of resources to the state without significant reinvestment in rural areas. In the mean time population in rural areas was growing. The state appropriation of rural resources intensified during the socialist state (1975-1991) with serious consequences on households to adapt to intergenerational land fragmentation. This could be the major constraint to agricultural intensification and livelihood diversification in the country.

It is important, therefore, to see the nature of the state and its relation with the peasantry, and the livelihood pathway opportunities this relation gave rise to in light of the political and economic goals of the dominant political forces in the three phases respectively.

6. Analytical Framework

This study is concerned with how rural households cope with pressure on their most basic resource, agricultural land, for which the livelihood framework provides the most appropriate analytical tool for investigation. The framework links micro level livelihood activities to macro level policies thereby indicating the gaps and, hence, areas of adjustment and intervention. Following Ellis (2000), Carney (1998) and Scoones (1998), a framework (Figure 1) that captures the major factors that influence household welfare in the study area is developed for the purpose of this study. The framework encompasses household resources (assets), the mediating processes (factors that influence access) and the various activities and livelihood strategies that are employed by a household to obtain a living, and, therefore, can serve as a general organizing frame that makes up the environment in which livelihood construction takes place in the study area. It shows how a household*, using its resources (assets) and a mix of activities in the context of social factors, trends and shocks, pursues a particular livelihood strategy in order to attain a given livelihood outcome. It is not the intention of this study to treat adequately the entirety of factors and processes involved to secure a livelihood in the study area, rather to focus on household responses to pressure on land, the livelihood strategies and activities employed, the contextual institutional environment and the livelihood outcomes attained.

Agricultural land constitutes the dominant resource base for the creation of economic opportunities for the rural household in the study area. Other important household assets are labour power (its education, skill and health); livestock; savings; farm implements; credit; common property resources (such as forests, water and biological diversity); and social assets representing the social networks and associations including community and wider social claims to which the household is entitled to. Access to assets and the use to which they can be put is mediated by social factors (social relations, institutions and organizations) and exogenous trends and shocks. The role of public policy as an instrument to support the intensification process and livelihood diversification is already mentioned above.

* Or by an individual or a community

It has been mentioned that policies are influenced by and, therefore, reflect the political positions of governments. Policy is an expression of political power (Nustad & Sending 2000) and is designed in such a way to uphold the interests of dominant groups in the society. Its formulation has a basis on what is considered relevant and fairly achievable by the policy makers. In addition, in circumstances when governments come to power using force such as it was in Ethiopia, radical policy reversals are usually the case. In such a situation former policies are discarded regardless of their merit and whatever was achieved through their application and, a fresh beginning is made with serious consequences on the livelihood of the population.

Ethiopia has passed through three political phases in its recent history as far as rural policy intervention is concerned. These are the 1950-1974 period, the 1975-1991 period and the time after 1991. An important feature to the recent political history of the country is that power was being transferred through violent means resulting in governments with opposing agendas. Ethiopia was ruled by an absolute monarchy until the 1974 revolution. The later part of the imperial period (1950-1974) had seen the beginning of policy intervention in rural Ethiopia for the first time. The scope of this intervention is very much limited and was basically dominated by feudal relations and interests at the expense of the masses of rural people. Markets and marketing structures were underdeveloped and modern infrastructure was barely available outside the big towns. The 1975-1991 period had seen socialist centralized planning and a closed economy. Even though land was made accessible to the peasants, its gains were curtailed by heavy state intervention in the production and marketing processes. It was basically a war economy where the state was trying to maintain its hold to power in an increasingly hostile internal and external environment. Following the 1991 government change a free market economy was proclaimed. Nevertheless the peasantry remained captives of the state throughout the time. It has no instrument to influence policy. Even when organized, as it was under the previous socialist and the present governments, the peasant association is rather found to serve the interest of the state

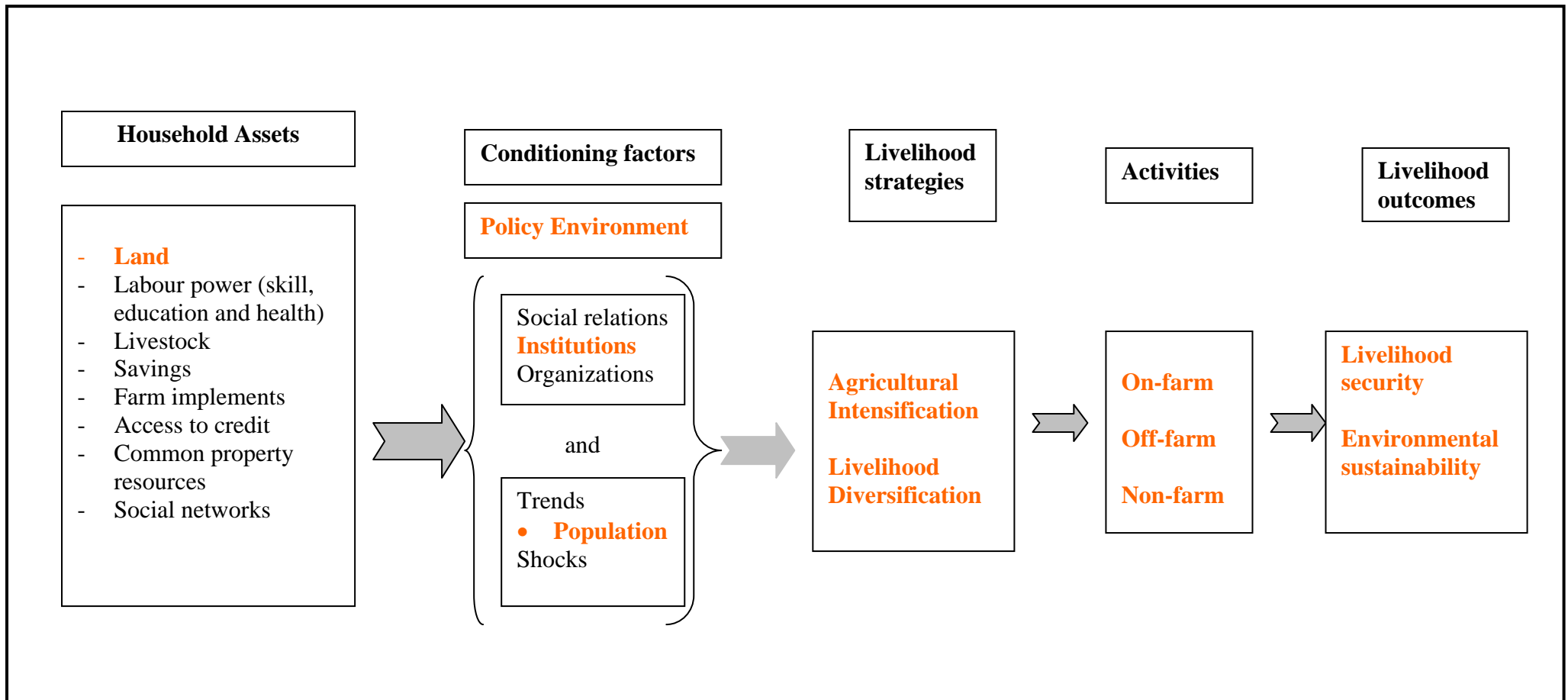


Figure 2. Simplified Representation of a livelihood construction process

Adapted from Ellis (2000), Carney (1998) and Scoones (1998)

7. Scope of the Study

This study is concerned with household responses to rising pressure on land and, therefore, the household forms the unit of study. The term household is taken as representing the smallest social unit composed of people that share the same abode for an extended period of time. It is different from an extended family in which case short visits and supports may be exchanged among members occasionally. With the exception of nomadic areas, communities in rural Ethiopia are organized into local peasant associations where the names of the heads of the households enter into registers. It is easy to identify a household and its members as the local peasant association keeps track of who belongs to which household and whether a person is an inhabitant of the peasant association or she/he is from elsewhere. Property and land titles are usually registered in the name of male heads unless when it may be transferred to the wife upon the death of the husband.

But the concept of household is a subject of varied interpretations, and its treatment as a unit held together by motives of altruism led by a benevolent head is challenged (Nussbaum 2000). This is because it fails to show the intra-household differences with regard to access to resources and opportunities. Power relations can be structured based on sex and age, which may usually disfavour the wife, the girls and the younger members of the household. This state of condition is widely questioned not only from the point of view of equality and justice but also efficiency. For example, property ownership, especially land rights by women, is found to positively contribute to agricultural productivity and human resource development (Nussbaum 2000, Deininger 2003). There is no doubt that it will also lead to falling fertility.

However, the treatment of intra-household relationship is outside the scope of this study given the objectives. But information on the aspects of the relationship concerning control of resources, decision-making process, issues related to the distribution of resources and opportunities, and the place of women in livelihood construction and the circumstances related to fertility will be obtained both from the husband and the wife, who will be interviewed separately.

The study consists of two main components. The first component is an in-depth analysis of rural policies, institutional and organizational factors, whose purpose is to draw relationships between these factors and the resulting production and livelihoods construction processes by the people.

This will be conducted in three phases in recent Ethiopian history.

- i) 1950 – 1974 (The times of Emperor Haile Sellasie I). The 1950s is chosen as a starting point because it marks the beginning of modern rural intervention in Ethiopian history. Ethiopia inaugurated its first five-year development plan in 1957.
- ii) 1974-1991. This is the time of the socialist revolution, closed economy and centralized planning.
- iii) Post 1991. Free market economy is initiated.

The main objective of the review is to establish links between changing rural policies on one hand and production performance and livelihood construction effort of the rural people in each phase at the micro-level on the other. The differences in policy focus between the three phases with regard to population, land reform, population-resource relationships, and the livelihood construction of the rural people will also be investigated.

The second component of the study deals with the analysis of livelihood construction by the people in the study area at the present time.

8. Study Method

8.1.1 Sampling and Data Collection

1. Sampling Procedure

- a) A total of eight (8) villages (peasant associations), four villages from high density and four villages from low-density districts will be selected for the survey. This enables the comparison of the effects of density variation keeping variables constant. Sodo Zuria and Damot Gale are identified, as high-density while Humbo and Damot woyde as low-density districts (refer to Fig. 1 for the location of the districts).
- b) A total of 200 households, 25 households from each village (peasant association) will be chosen using simple random sampling.
- c) On issues pertaining to preference of number of children, family planning, child education, household decision-making process, access to resources and opportunities, and perception of considered household priorities, ... information will be collected from both the husband and the wife in a separate interview.

2. National and regional population policy is used to analyse how population is viewed at the “macro” level while household perception of family size for its “micro” consideration.

8.1.2 Data Sources and acquisition methods

The sources and methods used to acquire data for the research are outlined below:

- i) Use of structured questionnaire and its administration to a sample of 200 households randomly selected from a list of members of the peasant association in each village.
- ii) Use of semi-structured questionnaire and its administration to focus groups (key informants such as housewives, older household heads, locally acknowledged knowledgeable persons, development agents and officials in the area).
- iii) Collection of official statistics, census materials and other published materials
- iv) Analysis of public policies
- v) Use of records of development projects, governmental and non-governmental organizations
- vi) Personal observation and participation

8.1.3 Data types

The following categories of data will be collected:

- a) Household demographic characteristics- household size, intra-household division of labour, household decision making process, access to resources and opportunities
- b) Perception of family size, large family, small family
- c) Temporal population for the Zone, village population through time
- d) Assets ownership by the household – list of resources available to the household
- e) Migration - remittance
- f) Livelihood strategies – activities engaged in order of importance - income from on-farm, off-farm and non-farm activities
- g) Seasonal aspects of activities, seasonal income, seasonal food supply
- h) Land use practices – cropping pattern, crop type, use of labour, draught power (traction and pack), input use, credit, marketing, diversification of production
- i) Soil protection and land management practices such as farming practices, conservation practices, land cover, change in input use
- j) Climatic and other hazards - rainfall, pests and diseases
- k) Consumption and spending trends, change in life style such as food habit, use of utilities

- l) Access to physical and social infrastructure – roads, school, health facilities (human and livestock), market, credit, agricultural technologies
- m) Perceptions of policies, organizational and institutional environment.

8.1.4 Reliability and Validity of the research outcome

The reliability and validity of the outcome of this research project will be ensured as much as possible by taking the following precautions.

- a) Focus groups will be used to obtain local perceptions on concepts such as poverty and wealth, secure livelihood and quality of agricultural land. Also, questions will be included in the questionnaire to pin down individual respondent perceptions and feelings on these concepts.
- b) Sample households are drawn randomly though stratified based on wealth and male- and female heads.
- c) The insights obtained from the combined use of quantitative and qualitative methods simultaneously increase the strength of the conclusion.
- d) The fact that the methods and procedures used in data collections and analyses are clearly outlined enables the replication of the study.
- e) The following measures will be taken in addition to the above:
 - Focus groups and key informants will be selected by weighing their age, gender, credibility and character integrity as is generally accepted in the villages (Peasant Associations).
 - Consulting knowledgeable persons (experts, development agents, researchers) on issues that require expertise.
 - Crosschecking information obtained through interviewing with information gathered from public records and published materials on the issue.

8.2 Methods of Data Analysis

The research strategies employed in this study combine both qualitative and quantitative methods. The advantage of simultaneously employing qualitative and quantitative methods in the study of rural livelihoods is getting increasing recognition among researchers (Ellis and Freeman 2004, White 2002, Kanbur 2001). It enables to benefit from the enhanced insights that the two methods provide when used in combination.

Qualitative method is used to capture the social and institutional aspects of livelihood construction in the area. Qualitative data on local perceptions will be collected from focus

groups and the personal histories of older household heads using **semi-structured questionnaire**. I, together with my interpreter* will conduct the interviews on key informants and collect the personal histories of older household heads (The number of key informants and older household heads will be decided in the field). Secondary information on policies, investment in infrastructure and technology transfer will be collected from public records. **Quantitative data** on household assets, activities, income, expenditure, demographic information will be collected from sample households using structured questionnaire where my interpreter and I interview each sample household head following the standard administration of interview procedures in this method.

8.2.1. Qualitative Analysis

The information gathered from key informants and the review of documents will be compiled, organized, summarized and interpreted in relation to the periods and the particular issues they refer to with reference to livelihood intensification and diversification by the rural people. This involves:

(1) Reconstruction of conditions of the period 1975-1991 from the narratives of key informants. It involves descriptions of lived-conditions by individuals and through group discussions on such key issues. Semi-structured interviews, group discussions and personal observations in the field will be used to get responses on the issues.

(2) Review policies, institutional and organizational factors, public investments in infrastructure and technology transfer in light of their contribution to enhance/impede the capacity of the rural people to construct livelihood intensification and diversification.

(3) Review of research findings, books and other published materials on the field.

This is basically an analysis of literature review on the socio-economic and political conditions of each of the periods.

8.2.2 Quantitative analysis

The primary data that is collected from sample households will be analysed and tested using SPSS.

(1) Intensification – use of input per unit of agricultural land

- Number of harvests per plot in a year, (frequency of cultivation)
- Chemical fertilizer use per unit of agricultural land

* The local language in the study area is Wolaita, which I do not speak.

- Shift to crops of higher value
- Shift to crops of higher yield.

These will be seen in light of the prevailing policies, institutions, organizations, trends and risks. The key elements of these processes and their relationships are shown in figure 3.

(2) Livelihood Diversification

Livelihood diversification i.e. type and number of household livelihood activities, will be measured in relation to:

- Farm size, and
- Family size
- Density variations

3) See to it if there is a relationship between growing pressure on land and its management.

- Is there a relationship between increasing pressure on agricultural land and the adoption of land management and improvement practices?

9. Expected Outcomes

- a) A research report in the form of a PhD thesis, having the following general outline will be submitted to the University.

(Please note that the titles and number of the papers are tentative)

- 1. Policy assumptions and empirical realities of birth control in Wolaita, Ethiopia (ref to research questions IV).**
- 2. Livelihood adaptation in a high population density area in Ethiopia: The case of Wolaita (ref. To research questions II)**
- 3. Socio-cultural factors and livelihood security: asset building or sharing? The case of Wolaita society, Ethiopia (research questions to be fixed).**
- 4. Rural policies and livelihoods in Ethiopia: a review of development policies since the imperial period (ref. Research questions 1)**

10. Study Plan

The study is expected to take four years. The temporal distribution of the different activities in the course of the study is given below.

a) March 2004 - February 2005 (12 months)

Major Activities: Course Work

- i. **Spring Semester 2004 (March 2004)**
 - PHI 400 (philosophy of Science and Research Ethics), and ECN 451 (Institutions, Property Rights and Development
 - Re-working on the Proposal
 - Collection of background information on the research sites.
- ii. **August 2004 – February 2005**
 - Course work on Development studies (EDS 410)
 - Proposal development (finalizing)
 - Literature review
 - Questionnaire development

b) March 2005 – December 2005 (10 months)

Major Activity is **fieldwork** in Ethiopia: Collection of:

- Primary data from sample households
- Secondary data from various sources, Central Statistical Authority, regional and local administrative bodies, bureaus of agriculture, population and others, aid agencies, etc.

c) January 2006 to February 2008 (26 months)

- Attend course, ‘Categorical Data Analysis, Stat 330’
- Organising, analysing, summarizing data
- Write-up of the findings
- Publication of four articles
 - By end of 2006 Paper I and Paper II
 - By end of 2007 Paper III and Paper IV
- Submission and defence of the thesis

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