

UNITED NATIONS DEVELOPMENT PROGRAMME

THE AGRICULTURAL SECTOR IN OCHAMCHIRA,  
TKVARCHELI AND GALI, ABKHAZIA, GEORGIA

Report of a short-term consultancy  
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## Executive Summary

The Agricultural Consultancy described in this report was carried out to provide supporting information to the development of the UNDP Abkhazia Recovery Programme. The objective was to assess current conditions of the agricultural sector in Gali, Ochamchira and Tkvarcheli districts. A twofold approach to data collection was adopted in which rapid rural appraisals (RRAs) in sample villages and key informant interviews at all levels of Abkhaz society were conducted.

During the Soviet Union, agriculture in Abkhazia was dominated by tea, citrus and tobacco production. Following the collapse of the Soviet Union and the Abkhaz/Georgian conflict, tea production dropped by over 80%, the tobacco market collapsed and citrus production greatly declined.

Current rural livelihood strategies in Abkhazia are dominated by mixed subsistence farming with small elements of cash cropping. Cash for essential items such as manufactured food, clothes, education and medical services is obtained from the sale of cash crops and/or surplus farm production. Less common sources of income include employment, pensions, IDP payments, family remittances and humanitarian aid. Current livelihood strategies are vulnerable to shocks such as plant and livestock disease, bad weather conditions and inadequate nutrition of livestock.

All villages studied had functioning schools, shops, corn mills and regular electricity supply, but other infrastructure was in poor condition; water supply systems do not exist or are damaged and only partially function, roads and bridges need repair, river banks are being seriously eroded, the telephone system does not work and factories and farms are derelict. The most serious weaknesses regarding agriculture are the poor condition and lack of availability of farm machinery and the lack of adequate fencing to protect crops from grazing livestock.

The level of education and skills in rural areas is high, but there is a need to build farmers' capacities to identify, develop and apply improved agricultural technologies and to improve the current weak understanding of market economy mechanisms. It was notable that women were more receptive to new ideas, knowledge and skills than men.

There are clearly delineated responsibilities between men and women in terms of agricultural production, but most activities are undertaken by both, except where there are physical limitations. Men's responsibilities are corn, large livestock, firewood and cash crops. Women's responsibilities are production of vegetables, poultry, fruit as well as fruit, vegetable and milk processing. Marketing is mainly carried out by women.

Natural resources are abundant in Abkhazia and theoretically present no constraint to the expansion or intensification of agriculture. The large amount of abandoned land provides low cost grazing for livestock but is gradually deteriorating and the cost of bringing this land back into cultivation is increasing with time. All agricultural land in Abkhazia is deemed to be the property of the state and private ownership is not permitted. All rural householders have a garden plot and an area of land for corn production. Access to land, additional to the garden plot, is closely controlled by the state and grazing livestock are heavily dependent on abandoned or unused land, the rights to which are not explicit. Ninety percent of households keep cattle, reflecting their significance in the farming system. All farmers also reported keeping both pigs and poultry.

Rural employment is low, but significant levels were reported in four of the eight villages studied. Pensioners qualify for either Russian pensions or Abkhaz pensions; both of which are paid regularly. Many Georgian families in Gali qualify for IDP status and receive a small monthly payment from the Georgian government. Borrowing from neighbours or relatives is widespread and loans are used for purchase of essential foods, agricultural inputs, health costs, education and local ceremonies; no interest is charged. Commercial credit is hardly available; the Abkhaz government provides credit for state farms activities and also for starting up new private sector agricultural enterprises.

All villages have an administration and linkages with the district administration. In general villages have good internal relations and continuing positive social linkages with neighbouring villages. All villages have undertaken collective rehabilitation activities. No farmer's associations exist and there are few external linkages for agricultural information. Agricultural support services (credit, information, input supply etc.) are very weak and access to them is restricted.

In general the main retail markets appear well run and no significant barriers to entry were detected. Corruption appeared minor and market costs are not constraining market entry. Traders indicated that business is increasing, price inflation is significant and competition is also becoming greater. There are opportunities for import substitution in the internal (Abkhaz) market but there are finite limits to this as the internal market is small. A number of possible mechanisms are recommended for improving access to markets including awareness raising, formation of seller groups, formation of trader (wholesaler) groups, improved wholesale markets and development of simple market information systems. Currently no existing commercial processing activity provides any opportunity for marketing of small farmers produce.

Security problems may have repercussions for future interventions especially in respect of Gali and parts of Tkvarcheli. Farmers in poor security areas are reluctant to consider activities that might increase income as they become 'targets' for criminals. Where security levels require visits in armoured vehicles the rationale for doing any development oriented activities needs to be questioned as no appropriate rapport with communities can be achieved. Current UN security procedures would considerably hinder practical day-to-day implementation of rural development activities.

Based on the main conclusions and inline with the anticipated approaches for the area development programme, an integrated programme of agricultural activities is recommended with the overall purpose of improving agricultural livelihoods in Oчамchira, Tkvarcheli and Gali districts. The main recommendations are i) to reduce vulnerability by strengthening subsistence livelihood activities. ii) to identify and pilot opportunities for livelihood diversification, iii) to improve the availability and uptake of agricultural support services and iv) to improve the marketing skills and access to markets for farmers and rural businesses. v) to build relationships between stakeholders in agricultural development.

Implementation of agricultural activities is proposed in three phases. The objective of the first phase is to implement vital measures to improve livelihood security through strengthening subsistence farming and undertake preparatory work for follow-up income generation activities. The objective of the second phase is to support "best bet" income generation ideas, pilot new income generation ideas and develop support services in pilot villages. The objective of the third phase is to disseminate experiences and best practice in income generation and service provision to other villages and/or other parts of Abkhazia.

## 1. Introduction

The Agricultural Consultancy described in this report provides supporting information to the development of the UNDP Abkhazia Programme, which aims to establish an environment conducive to local recovery. The structure of the programme is still under development, but it was clear from the initial feasibility study lead by UNDP in early 2004 that agriculture should be a critical component of the programme. The Objective of this consultancy was to assess the current conditions of the agricultural sector in Gali, Ochamchira and Tkvarcheli districts and comprised the following main tasks.

- Provide a brief overview of agriculture and livestock production in Abkhazia with broad indications of the types and nature of holdings.
- Undertake a study of agricultural and livestock holdings, practices and marketing in the 3 districts.
- Provide detailed information on small farmers outlining their needs in respect to extension, farm equipment, seeds, fertilisers and transport.
- Examine the processing sector in the 3 districts and describe what is being produced and the potential for future production particularly in relation to the role of small-scale producer-controlled processing units.
- Describe the role of women in agricultural and livestock production in the 3 districts.
- Describe how the security situation is affecting agricultural and livestock production.
- Provide recommendations for the development of the agricultural and livestock sectors in general and in particular in respect to improving livelihoods of the poorest groups, be they returnee or local communities.
- Provide recommendations for improving access to markets and for improving the way in which the markets operate.
- Design concrete sub-projects for later implementation by the UNDP staff and others involved in the program.

The consultancy took place from 9th November to 1<sup>st</sup> December 2004.

## 2. Methodology

Given the broad nature of the information required and the paucity of information on small farmer livelihoods a twofold approach to data collection was adopted. Firstly rapid rural appraisals (RRAs) in sample villages of each district and secondly key informant interviews at all levels in Abkhaz society. A methodology for the appraisals based on a sustainable livelihoods approach was developed and agreed upon; the main elements of the appraisal were:

- A meeting of representatives of the village to draw up a profile of village assets, linkages and trends.
- Gendered discussion groups to collect data on daily and seasonal activities as well as information on income, debt and development opportunities.
- A farming systems interview in order to get detailed information on the main elements of the farming system and the relationships between them

Two local NGO workers were hired and trained to undertake the main facilitation role and the RRAs were implemented by two teams. Eight villages were included in the study: four in Ochamchira (Kutol, Labra, Tamish and Kindgi), two in Tkvarcheli (Agubedia, Okumi) and two in Gali (Mziuri, Saberio). The main objectives for village selection were to sample known differences in size, ethnicity, institutions and agricultural conditions and these criteria were mostly met. Important omissions were high valley villages which may have characteristic agricultural systems, and small villages less than 100 households. A summary of size and ethnic composition of the villages studied is provided in Annex 1. In addition to the RRAs a programme of semi-structured interviews with key informants was undertaken; these included market traders, village and district administration officials, state ministers, processors, shopkeepers,

teachers, agricultural entrepreneurs and development professionals. A full description of the methodology has been lodged with the Programme Office.

### 3. Agriculture in Abkhazia

Abkhazia is situated on the eastern shores of the Black Sea and comprises a narrow coastal plane which quickly rises into the foothills and peaks of the main Caucasus mountain range; 75% of the land is classified as mountainous or foothills. The State classifies land by altitude (below 100m, 100-250m and above 250m); this appears primarily related to soil fertility- no systematic classification of agro-ecological zones was found. The climate is mainly humid subtropical but more temperate in the high valleys which are sparsely populated. Rainfall is high (1700-1800mm) with peaks of rain in late winter (November December) and early spring (February, March, April). Consequently the agriculture is predominantly rain fed.

Pre-soviet agriculture was dominated by livestock production in the upland areas; the coastal plain was originally wetlands which were drained in the 1930's during the main period of Soviet collectivization thus substantially increasing the agricultural productivity of the territory. A notable feature is the presence of thermal springs in the coastal plain, which are harnessed for hothouse vegetable production and for health resort tourism. Abkhazia has abundant forests particularly in the higher valleys.

During the Soviet period, agriculture in Abkhazia was dominated by tea, citrus (mostly mandarins) and tobacco production. At its peak Abkhazia was supplying 15-20% of the tea demand of the former Soviet Union and peak annual production levels were 110,000 tonnes of tea, 120,000 tonnes of citrus and 14,000 tonnes of tobacco. In addition there were large areas of Tung trees grown for industrial oil production as well as smaller specialised activities comprising chicken breeding, dairy farming, essential oil and silk production. Apart from the state farm sector rural households grew fruit trees, vegetables and hazelnuts and kept small numbers of livestock.

Following the fall of the Soviet Union, state agriculture collapsed due to the loss of support mechanisms and dislocation of markets. Tea production has dropped by over 80% and large areas of tea plantation are abandoned. The tobacco market also collapsed and the crop is now rarely grown, the citrus market has survived the transition but the lack of inputs and destruction during the conflict means that production is a fraction of former levels. The hazelnut crop has become more economically significant especially as a cash crop supporting the livelihoods of individual households. The collapse of the state sector employment followed by the Abkhaz conflict and consequent depopulation has led to a rural economy dominated by household subsistence agriculture in the midst of large areas of abandoned land and plantations.

### 4. Livelihood Strategies in Rural Abkhazia

The key livelihood strategy in all the villages studied is a mixed farming system based on livestock (cattle, pigs and poultry) and maize (corn) with vegetables, all grown primarily for subsistence plus small areas of cash crops such as citrus or hazelnut (Table 1.). A more detailed summary of the main elements of the farming system is provided in Annex 2.

<b>Component</b>	<b>Functions</b>
Livestock	Subsistence, cash income (meat, milk products), savings, ceremonial obligations
Cash Crops (Citrus, Hazelnut)	Cash income, Short term savings (hazelnut only)
Fruit and Vegetables	Predominantly subsistence, occasional cash

	income from surpluses
Corn	Subsistence and animal food for winter (allocation depends on wealth and season)

**Table 1. Summary of the main farming system.**

The farming system is low input low output with a minimal reliance on external inputs. Seeds of vegetable and corn are saved, virtually no pesticides are applied, livestock graze extensively and are fed corn straw and ground corn in winter. Sowing, weeding and harvesting of corn is mainly by hand. The only external inputs commonly used include Nitrogen fertiliser, fuel and machinery hire for cultivation and veterinary medicines which are mostly applied on a reactive basis. The traditional cash crops (citrus and hazelnut) have established external private sector markets which have evolved following the collapse of the Soviet Union. Firewood for heating and cooking is gathered from local forests where rural inhabitants have established rights of collection.

The availability and condition of machinery is poor and most households hire a tractor and driver to undertake essential cultivations. Tractors are owned by state farms or by individuals who have somehow acquired ownership; state farms often allow former engineers or drivers to provide machinery services as a self-sustaining business. The low availability of machinery services often result in untimely and inadequate corn cultivations with attendant costs to production.

The seasonality of labour is typical for a single cropping season with peaks relating to planting and harvesting. The main planting season for corn is April and May, vegetable planting begins earlier in March, and weeding and fertiliser application takes place in June July and August. The harvesting peak begins with hazelnuts in August, followed by fruits (September, October), corn (October, November) and citrus (November and December). An additional labour demand is for collection of timber, which for most villages studied took place in August/September but occurred in November in two upland villages (Agubedia and Saberio). Timing of labour peaks for men and women are similar, reflecting the considerable sharing of tasks (see 5.1.), but the extent of labour peaks tended to be greater for women due to their involvement in vegetable (earlier planting) and fruit (protracted harvesting) production, plus fruit and vegetable preservation. The village of Labra with a farming system oriented to multiple cropping of vegetables exhibited a high constant labour demand. There is more detailed information on seasonal labour in Annex 3.

Cash for the purchase of essential items such as manufactured foodstuffs, clothes and education and medical services is obtained from the sale of cash crops, i.e. hazelnuts and citrus (N.B. not all households grow these crops) and from the sale of surplus farm production, including dairy products (mainly cheese), meat, vegetables and occasionally corn. Other sources include vegetables as a cash crop, production and sale of honey and the sale of manufactured items such as baskets from wild hazel and brushes from special grasses.

Agricultural based incomes occur in the latter part of the year, usually starting with the hazel harvest in August, followed by corn (if sold) in October/November and citrus in December. Vegetable sales may provide income earlier, but only in villages where vegetables are a significant cash crop (e.g. Labra, Kindgi). While the hazel harvest takes place in August actual sales are spread over 3-4 months to take advantage of rising post harvest prices.

Detailed data on cash incomes was not collected, but some examples are given below:

- Vegetable sales at height of season (2-3 months) can bring in \$100 per week – Labra farmer (cash cropping not surplus sales)
- Plantation of 100 hazel trees provided income of \$1000 – Saberio farmer
- Plantation of 50 mandarin trees provides an income of \$1000 – Saberio Farmer

Cash income from livestock and dairy products is usually less than the cash crops mentioned here but the regular nature of income from dairy products and the possibility of converting livestock to cash at any time are important factors for household survival.

The main agricultural expenditures occur earlier in the year than incomes are generated particularly spring cultivation costs which for a typical 1 Ha corn field are 1500 R (\$50) for hire of machinery, 750 R (\$25) for fuel and 1440 R (\$48) for fertiliser. These demands on the household budget are aggravated by the increasing shortage of home produced products, which occurs from February to June, necessitating additional cash expenditures.

All households with land and animals are liable for local taxes. Land tax (rent) is due both on the household plot and the corn land; tax levels vary from district to district and according to land use (household, annual crops, perennial crops etc.). Charges are typically 50 to 100 roubles per year per 1000 m<sup>2</sup>; for example a household with 0.5 Ha of household land and 0.5 Ha of corn land would pay between 500 to 1000 Roubles (\$17-\$33). There are exemptions and reductions for government officials and for the disabled or widowed; enforcement is benign and in bad harvests payments may be reduced, made payable in kind or even waived for poor households. There is also a grazing animal tax of between 50 -60 R (\$2) per animal; this is much less easy to enforce than land tax and avoidance is commonplace. Further data on agricultural incomes and expenditures are given in Annexes 4 and 5.

Employment is not a significant aspect of rural livelihood strategies. There are appreciable levels of employment in a few villages with functioning state farms or with state enterprises such as the Inguri power station but otherwise rural employment levels are limited to the few who work in schools, ambulatories, local government and larger private enterprises. Additional sources of cash income are state pensions, IDP payments, borrowing from neighbours and remittances from families in Sukhumi, Russia or Georgia. Some of the most vulnerable receive direct food aid from ICRC or indirect support through the WFP's food-for-work programme.

## **5. Summary of Rural Assets**

In the village appraisals information was collected on human, physical, natural financial and social assets in order to gauge asset strengths and weaknesses. Summaries of the data from village appraisals are lodged with Programme Administration.

### **5.1. Human Assets**

#### Skills

As in most FSU societies the level of education is high and a broad range of key agricultural and related skills are already present, but few people are fully utilising their training and skills since subsistence agriculture is the main priority. The expertise recorded in village appraisals included; engineers, economists, agronomists, accountants, teachers, traders, vets, carpenters, builders, machine operators, nurses, electricians, shopkeepers, lawyers and blacksmiths. Further information on the skills and professions is provided in Annex 6.

#### Migration

Few respondents mentioned remittances from migrant family members abroad but this issue would bear further investigation. Local migration was a more significant factor in livelihood strategies and 3 types could be discerned:

- Younger family members who live in Sukhumi but return to the rural household at weekends in peak labour season to assist with farm work.
- Absentee farmers who live in Sukhumi or other towns and return to the village plot periodically to carry out key farming activities.
- IDP families based in Georgia who come to live and farm in Abkhazia during the spring and summer (mostly in Gali district).

#### Gender Issues

There are clearly delineated responsibilities between men and women in terms of agricultural production, but most activities are undertaken by both except where there are physical limitations or in food

processing, which women dominate. Men have overall responsibility for corn production, large animal production (buffalo, cattle, pigs), timber collection, cash crops (hazelnut, citrus) and grapes. Women's main responsibilities are vegetable production, poultry production, non-citrus fruit production, dairy production and fruit and vegetable processing. Marketing is usually carried out by women although decisions about what, when and where to market are taken by men or by men and women together. Gender differentiation of agricultural tasks is summarised in Table 2.

<b>Predominantly Women's Tasks</b>	<b>Predominantly Men's Tasks</b>	<b>Tasks Undertaken by Men and Women</b>
Management of Vegetable Production Preparation of Dairy Products Market Trading Stock keeping Poultry Vegetable and Fruit processing Vegetable Seed production Manufacture of grass brooms Water collection if necessary	Management of Corn Production Soil cultivations Stock keeping (large animals) Winter fodder collection and storage Fruit (citrus and grapes) Fruit pruning Timber collection Tobacco picking Basket weaving	Planting corn Milking Feeding animals Planting vegetables Applying fertiliser Weeding veg. + corn Harvesting vegetables, fruit and corn Tea cultivation Hazelnut harvesting Fruit harvesting

**Table 2. Summary of gender differentiation of agricultural tasks**

Women tend to work marginally longer hours than men in periods of low agricultural labour demand (10.7:8.7 hours/day) but at busy periods both work equally long days (11.7h/d). As expected women devote much more time to reproductive activities (child care, cooking, etc) than men (4.6:1.1 h/d) but both reduce the time devoted to reproductive activities in times of high agricultural labour demand (2.8:0.3 h/d). The contribution of women to productive activities (agriculture, income generation) is significant comprising between 57% and 76% of their working day. Further data is available in annex 7.

## **5.2. Physical Assets**

Physical assets means infrastructure (including the means of production) and communications. A summary of findings is given in Annex 8. All villages studied have a functioning school; some have been rehabilitated by village efforts with or without support from agencies such as UNHCR, but most schools require further rehabilitation. Of the villages studied, Saberio and Okumi have hospitals, Tamysh, Kutol and Agubedia have ambulatories, Mziuri, Kindgi and Labra have no medical building. All villages have shops and flour mills and most have administration buildings.

The availability of household water supply is covered in detail by the parallel consultancy on water supply. In this study Tamish, Okumi and Labra reported functioning centralised water supply systems, which require rehabilitation while in the other villages water supply is from garden wells or pumped/carried from springs, rivers and streams.

For villages situated on, or very close to, the main highway (M27) road conditions are adequate. For villages a significant distance from the M27 the connecting roads are in a poor condition, Kutol and Okumi being notable exceptions. All villages referred to damage caused by the annual fierce river flooding which undermines road bridges and in some cases is actively eroding cultivatable land.

Telephone communications in villages are absent or nearly so with most telephone exchanges destroyed during the conflict. Electricity supply is regular in the villages studied but four reported inadequate or damaged transformers.

Almost all processing factories (except for a few tea factories) and intensive farming units are abandoned and derelict. The infrastructure for harnessing hot springs in the coastal plain for greenhouse vegetable

production and health spas is mostly destroyed and freely escaping high pressure hot springs are a common site. However some livestock farms and vegetable greenhouses are being rehabilitated by private enterprise.

All agricultural machinery is in an extremely poor condition. No new machinery has been introduced since Soviet times and the stock is rapidly disintegrating. Moreover most of the tractors are specialised for large-scale work and are not appropriate for cultivating small areas of corn and vegetables. Village appraisals indicate there are insufficient tractors to carry out timely cultivations especially in wet weather conditions. A further infrastructure weakness is the fencing of gardens and cornfields, which most villages reported as inadequate, leaving crops vulnerable to damage and destruction by freely grazing livestock.

### **5.3. Natural Resource Assets**

#### **5.3.1. Land**

All agricultural land in Abkhazia is the property of the state and private ownership is not permitted. Land is managed by the local government, according to principles dating back to the Soviet Union. Given the significant depletion in population and degeneration of the state farms, land is currently in abundant supply. However, in some villages considerable areas of land are tied up in abandoned plantation crops such as tea and tung trees, which cannot easily be transferred back into arable cropping. Access to land requires certain administrative procedures and these appear straightforward. Finance, machinery and labour are more significant constraints to the expansion of land use.

All rural householders have a garden plot adjacent to the house which varies from around 0.2 to 1.0 Ha. This land is permanently associated with the house and the owners of the house have certificate affirming their right to use this land. This certificate and right is inheritable. The plot can be expanded if land is available but this is not common. The garden plot is mostly used for vegetables, fruit trees, perennial cash crops as well as for fodder storage and winter housing of livestock; households may also cultivate corn on part of the garden plot. Data from the study demonstrates that there is considerable variability between and within villages in respect to garden plot size. Some villages have consistent plot sizes (e.g. Kindgi 0.25Ha, and Kutol 0.5 Ha) while others have considerable variations in plot size (Labra and Tamish). The majority of household gardens are 0.5 Ha or less, but some villages such as Kindgi and Mziuri have smaller plots (0.25 Ha or less). A few villages have a notable proportion of larger gardens (over 0.5 Ha) i.e. Agubedia and Tamish.

Households invariably rent an additional area of land for corn production. The size of plot varies from 0.2 to 1.0 Ha. A small number of farmers reported having larger plots. The land is on cornfields which are allocated to the village by the district land management department based on identified needs and capabilities of the village households. The land is designated for annual crop use and can only be rented on an annual basis, but all households reported using the same piece of land from year to year. Within the village the land rental is managed by the village administration, in some cases households rent corn land directly from the local state farm. There are less pronounced differences in sizes of cornfield between villages compared to the garden plots. In Kindgi and Mziuri cornfields were in general smaller than in other villages and plot size was quite variable in all villages except Kindgi where plots were consistently around 0.5 Ha. Further details on land ownership are lodged with Programme Administration.

The extent to which households can choose how much corn land they can rent is not clear, allocation may be related to an assessment at village level of the household's needs or ability to cultivate the area requested and this issue requires further investigation. All citizens have the right to rent larger areas of annual crop land on a yearly basis or rent land for perennial crops or for other rural land uses on longer leases. This requires application to the district office for land management including a project proposal,

#### **5.3.2. Livestock**

Ninety percent of all households keep cattle reflecting their significance in the farming system. The majority of households in this study have five cattle or less, but in some villages (Kutol, Agubedia, Kindgi and Okumi) over 40% have more than 6 animals. Labra, Tamish, Saberio and Mziuri have much lower levels or even none of these larger herds and Mziuri, Saberio and Okumi have notable levels of households without cattle. The reasons for the significant differences in holding of animals are complex, but important factors include the availability of labour in the household, the availability of grazing land, access to alternative income streams and interest in livestock production.

Very few households have buffalo except in villages located on or near the coastal plain where conditions are better for them. Households with buffalo rarely have more than three animals and normally only one; the proportions of households with buffalo recorded in this study were in Tamish (12%), Kutol (25%), Kindgi (30%) and Okumi (10%).

Goats were recorded in five of the eight villages studied but only in very few households (<1% to 5%); they are commonly kept in herds larger than 10. There is notable levels of horse ownership in four of the villages studied Kutol (85%), Kindgi (50%), Labra (10%) and Okumi (10%) but the other 4 villages have very low horse populations. The significance of these differences is not clear but is probably related to historical ownership and use of horses. The horses are used for draft purposes. All farmer respondents reported keeping pigs and poultry. Pig numbers rarely exceeded 5 per household and poultry numbers varied from 20 to 30 including turkeys and ducks. Further details on animal statistics are lodged with Programme Administration.

### **5.3.3. Perennial Crops**

There are two main categories of perennial crops: subsistence crops and cash crops. Subsistence perennial crops comprise the fruit trees which are grown in the household garden (see Annex 2) and which usually occupy around 10% to 20% of the household land. The important perennial cash crops are hazelnuts and citrus (mandarin). Hazelnut trees are particularly popular as they are easy to establish, yield after only a few seasons and have a harvest that appreciates in value over time. Citrus is also popular but its distribution is limited by agro-ecological conditions and produce is perishable requiring rapid marketing. Not all households have perennial cash crops and this may be a useful indicator of vulnerability.

Abkhazia is well endowed with forests and all villages have a local forest designated for “civic usage”. This forest is managed by the local administration who are entitled to levy a tax on wood extraction; however no village in this study is currently paying for wood. There were no reports of collection of other forest products.

## **5.4. Financial Assets**

### **5.4.1. Incomes**

Agriculture is the most important source of income in the villages studied and has increased in importance in the recent past. Sale of surplus agricultural produce is the most common cash income source; vegetables and fruit prices are low in periods of surplus and households prefer to sell meat, piglets and dairy products which are more under their control and can provide an income when required. In the Armenian village Labra cash cropping of vegetables provides significant cash incomes for many households.

Rural employment (and consequent cash income) is mostly very low, significant levels were reported in Tamish (70 with Halo Trust), Saberio (200 with power station), Kutol (40 with Tea factory) and Okumi (30-40 with tea factory). Pensions are an important and reliable social safety net reducing the vulnerability of the elderly and providing a regular cash income into houses where elderly are present. Those qualifying for a Russian pension receive 900 R per month others receive the lower Abkhaz pension of 370 R per month. Most of the Georgian families in Gali district qualify for IDP status and as

such receive 14 Lari (\$6) per month from the Georgian government. A summary of income sources reported in the village appraisals is given in Annex 9.

#### **5.4.2. Liquid Assets**

The dominance of the subsistence economy means the levels of cash circulating or held are low. Bartering is commonplace e.g. corn as payment for land tax, vegetables and/or corn as payment for machinery services. Payments for essential foods such as sugar, oil, and wheat flour are usually in cash but sometimes hazelnuts or citrus are bartered for these items and hazelnuts are commonly used in the place of cash. Households save cash during periods of high income (e.g. vegetable harvest, citrus harvest.) and keep it in the house for purchase of essential items in periods of low or no cash income.

The most important liquid assets held by households are livestock since these are wholly owned, can grow in value (e.g. through fattening or reproduction), provide a regular income (e.g. dairy products, piglets and eggs) and be exchanged for cash in an emergency or to provide cash for a specific expenditure (e.g. cattle for meat in order to buy fertiliser). Animals are also important as household contributions to social events such as weddings and funerals particularly piglets and poultry.

#### **5.4.3. Credit**

Households do not use banks on a regular basis either for loans or for savings; larger villages may have offices for the disbursement of pensions and other government payments but these offices do not take deposits. Borrowing from neighbours or relatives is widespread but is static or declining due to the low availability of cash and the strong social requirement to repay. Loans range from 500 to 15000 Roubles (\$17 to \$500) and are mainly used for essential foods, agricultural inputs, health costs, education and local ceremonies (see Annex 10). No interest is charged on these loans and the term of the loan is rarely fixed but usually understood to be “short term” and can be paid back on an intermittent basis. Repaying loans in kind, labour or services is possible but depends on the specific relationship, defaulting on these loans is rare. Village shops also provide short-term credit but of much smaller amounts 50 to 60 R (\$1.7-\$2.0) and for shorter periods (days and weeks rather than months).

The only other formal lenders active in the rural areas are the Abkhaz government, which provides two types of credit. Firstly credit is provided to active state farms; loans are based on farm expenditure plans and have to be paid back within two years and can even be written off altogether. Interest rates are 12% for perennial crops and interest free for annual crops like tobacco. Secondly credit is provided for starting up new agricultural enterprises from the state privatization fund. Loans can be up to \$20,000 and the interest rate is 7% p.a.; repayment does not begin until year 2.

#### **5.5. Social Assets**

The household, extended family, neighbourhood and ethnicity are the basic social elements mentioned in this study. Abkhaz respondents gave perceptibly more emphasis to neighbours while Georgian respondents gave more emphasis to family; Armenians emphasised neighbourhood, family and Diaspora linkages. Social cohesion appeared strong in all of the villages studied but was notably weaker in villages where security is a problem. Annex 11 provides a summary of social assets identified in village appraisals.

All villages have an elected council headed by an administrator. Village disputes are settled by the administrator personally or by the council or occasionally referred to village elders. Most villages have positive linkages with the district administration. The Armenian village Labra is a notable exception. In general villages have good internal relations and continuing positive social linkages with neighbouring villages. Collective work in brigades is active where state farms continue to function and is still recognised, and occasionally used in others. All villages have undertaken collective rehabilitation activities.

Social services are patchy; provision of education is universal but health services are erratic and even absent in the smaller or more remote villages. State social safety nets exist in the form of pensions and land tax allowances and some vulnerable families receive direct aid from ICRC. Internal community safety nets for vulnerable households (e.g. collective provision of labour or cash) are common.

No farmer associations exist but cooperation in farming activities and labour exchange between neighbours or extended family is commonplace. External networks for agricultural information are not developed or regarded as necessary by most farmers. Livestock farmers do consult local veterinarians on serious animal health matters and may or may not pay or barter for this service, but vets do not give advice on general livestock management. Farmers do not consult any experts in terms of crop, vegetable or fruit production, but may consult local highly regarded farmers or family members. Market information networks are not established and are anyway constrained by the lack of telephone communications.

## 6. The Needs and Opportunities for Small Farmers

The village appraisals provided data on local perspectives of needs and opportunities in respect of agriculture. This data is summarised in Annex 12. Five urgent needs relating directly to agriculture were recorded: river bank repairs, improved access to machinery, fencing of corn and other lands, fertiliser and finance. The rapid fall from high mountains to coastal plain results in wild flooding during high rainfall and river bank erosion occurs annually. The problems of poor access to agricultural machinery and inadequate fencing are already stated and are severe constraints both on food security and agricultural development. Fertiliser was voiced as a need in five of the eight villages, but money for purchase was cited as the problem. Finance itself was identified as a need in the same five villages.

The opportunities cited in the appraisals were livestock, vegetable, fruit and hazelnut production. Livestock enterprises were most popular with equal emphasis on cattle, poultry and pigs. Men favoured cattle and women favoured poultry reflecting their household responsibilities, pig farming was equally favoured by both. Vegetable production including greenhouse and extended season production was regarded as a key income generating opportunity especially by women. Fruit including persimmon, citrus, feijoa, apples and grapes was mentioned equally by men and women and the need for planting material acknowledged and even cited as a further opportunity (i.e. nurseries). The commonly suggested expansion of hazelnut production reflects the importance of this crop in providing cash. Other opportunities mentioned were: potato production (import substitution), fish farming (local knowledge and infrastructure exist) and processing (jam, sausages, cheese, timber, alcohol and fruit juice). Respondents agreed that these developments should be undertaken in the private sector but were uncertain about how this can be achieved and were fearful of the associated financial risks.

## 7. Marketing

### 7.1. Introduction

There are agricultural produce markets in the main towns of each of the three districts and a large market in Sukhumi. External markets such as Zugdidi in Georgia and the Psou River Border and Adler in Russia are also prominent locations for both trading produce and purchasing goods. In village appraisals Sukhumi and Psou were the preferred markets in which to sell agricultural produce while Gali market was widely regarded as the cheapest for purchase of goods including both food items and agricultural inputs. Villagers also sell produce to visiting traders (Table 3). Actual market channels depend on transport linkages and some villages do not have direct public transport linkages with Sukhumi and are unable to get produce to this market in time for the early morning “wholesale” trading.

	<b>Selling Produce</b>	<b>Purchasing</b>
<b>Kutol</b>	Sukhumi, Psou, visiting traders	Gali (cheaper)
<b>Labra</b>	Sukhumi, Psou, Adler, visiting	Gali

	traders	
<b>Tamish</b>	Sukhumi, Psou, Adler, visiting traders	Psou
<b>Agubedia</b>	Sukhumi, Tkvarcheli, Ochamchira, Gali, visiting traders	Sukhumi, Tkvarcheli, Ochamchira, Gali, Psou
<b>Kindgi</b>	Sukhumi, visiting traders	Sukhumi
<b>Okumi</b>	Gali (80%) Tkvarcheli (20%) occ. Psou, visiting traders	Gali
<b>Mziuri</b>	No data	Gali (cheaper)
<b>Saberio</b>	Zugdidi, Gali, visiting traders	Zugdidi, Gali

**Table 3. Preferred markets for buying goods and selling production**

A summary of trading strategies for the main commodities is lodged with Programme Administration.

## 7.2. The Main Markets

### Sukhumi Market

Sukhumi is the largest market in Abkhazia and has over 1,000 trading spaces of which 30% trade in agricultural products. The market is open 7 days a week. A large permanent hall houses meat traders and grocery shops while the majority of dairy fruit and vegetable traders are located outside. There are about 20 butchers (mostly men), 30 dairy product traders and over 280 fruit and vegetable traders (all women). A small market area is designated for the sale of live animals. There is no wholesale market but in a separate area close to the bus station traders purchase goods directly from village sellers as they arrive in the morning. Farmers may also trade in the market themselves or sell directly to traders' stalls inside the market.

The market is run by an administration accountable to the city local government. The main staff are a Director, three deputies and a team of controllers whose role is to ensure order in the market and that appropriate documentation and payments are made. There is a team of 4 vets who check and certify the meat and dairy products and inspectors who check and analyse vegetables and fruit (although the latter was not verified). The vets and inspectors are not employed by the market but operate on a "self sustaining" basis. To enter the market a trader makes an application to the market administration, a controller will find a place and the trader may accept this or wait for a better position, there is no charge for this process. Examples of the main costs of operating in the market are given below.

Product	Rental /month	Analysis	Other
<b>Chicken Meat</b>	500R (\$17)	1R (\$0.03) per chicken	300R (\$10)/year health checks
<b>Vegetables</b>	450R (\$15)	3-5R (\$0.01-0.02) per day	4 R \$0.13)/day/sack for storage
<b>Butchers</b>	200R (\$6.7)	20 R (\$0.067) per animal	300R (\$10)/year health checks

All fresh meat sold in the market is of local origin. For fruit, vegetables and dairy products the ratio of imported to local product is 50:50 local although this may change to 30:70 in the summer period. All respondents in the market reported an increase in trade and price inflation; however some chicken, fruit and vegetable sellers felt that income from trading is declining due to increased competition from local traders and imported goods. Butchers were more positive about business trends since there is little imported competition.

### Gali Market

Gali is a relatively small market located in the town centre. It is open 3 days a week on Sundays, Wednesdays and Fridays. Agricultural product stalls are mostly under cover in permanent buildings. There are around 50 agricultural market stalls. The market area also contains permanent grocery shops selling goods imported from Georgia and Russia. In general the market appears busy. Traders stated that entering the market was relatively easy and that trade had improved over the last few years. Most agricultural produce in the market is coming from Zugdidi and some (e.g. tomatoes and cucumber at this time) originate from Turkey. Local produce regularly traded includes beans, green herbs, vegetables, lemons and processed goods (e.g. chilli paste, vodka, dried spices). An example of the costs of operating in Gali market is given below.

Product	Rental /month)	Storage	Other
Vegetables	150R (\$5) per meter	5R (0.02)/day/ sack of produce	50R (\$1.67)/sack crossing the border

### Ochamchira Market

Ochamchira is a large market structure with over 150 stalls all outside under semi permanent structures. The market is open every day. Only around 20% of stalls were occupied at data collection, but according to traders this may rise up to 50% during the summer months. There are around 8-10 traders selling vegetables and 3 traders selling cheese. The vegetables (cucumber, tomato, onion, carrot, potatoes and beetroot) were either from Gali market or purchased from traders bringing produce from Russia. Local produce in the market was limited to cheese, maize flour, herbs, peppers and some pickles; local tomato and cucumber are sold during the summer months. Traders were pessimistic and reported that trade was in decline, one vegetable trader reported a typical income as 30 R (\$1.0) per day and pointed out that for surrounding villages transport was just as cheap to Sukhumi as to Ochamchira. The market controller is a veterinarian who also carries out the quality checking of agricultural produce. An example the cost of operating in Ochamchira market is given below.

Product	Rental /month)	Analysis	Other
Vegetables Cheese	150R (\$5) per meter (may be double in busy time)	5R (\$0.02) per day	5R (\$0.2) hire of scales

### Tkvarcheli Market

Tkvarcheli market is similar to Ochamchira, i.e. 150+ stalls outside under semi permanent structures. Market occupancy was around 90% when this data was collected. The market is open on Sundays, Wednesdays and Fridays. All traders are women except for the butcher. Meat is all local produce; cheese is mostly local, but imported cheese is for sale in the surrounding shops. Fruit and vegetables are imported from Russia; local products include mandarin, green peppers, herbs as well as tomatoes and cucumber in summer. Local processed products include maize flour, chilli sauce and few pickled vegetables. The market is supervised by a market manager who is responsible to the district administration; a local veterinarian carries out inspections for all agricultural products. Traders reported business in the market is increasing. On a “good day” a vegetable trader turns over 500 R (\$16.7) and the butcher 12000 R (\$400). An example of overhead costs in Tvkarcheli market is given below.

Product	Rental /month)	Storage	Other
Vegetables and Cheese	300 R (\$10) per meter	150R (\$5) per month	5R (\$.02) hire scales 5R (\$.02) per day analysis
Butcher	300 R (\$10) per meter	n.a.	20R (\$0.67) per day analysis 30R (\$1.0) per day police registration

A summary of trading strategies for the main commodities is lodged with Programme Administration.

### 7.3. Processing

Currently the main industrial processing activity is drying and grading of tea in the tea factories; the tea is not packaged but sold in bulk to markets in Russia. Other significant industrial level include hazelnut processing (shelling) in Tkvarcheli, and at least two soft drink bottlers (Tkvarcheli and Ochamchira) using imported syrups. There is one commercial winery close to Sukhumi. Other former canning and fruit processing plants are completely derelict or destroyed. Processing at household level for preservation is commonplace including cheese, yoghurt, pickled vegetables, bottled fruits, fruit juices, jams, wine and smoked meat. Only cheese and yoghurt are regularly sold for cash and there is a market demand for these products which is likely to expand as economic conditions improve. For other home processed products the market is small since a large proportion of the population are already processing their own.

## **8. Additional Factors Affecting Agricultural Development**

### **8.1. Security**

The issue of security is central to the development and progress of the UNDP programme in Abkhazia and in the process of this study three aspects of security have emerged as critical; the actual security situation in Gali district and adjacent areas, the UNOMIG patrols and the impact of security restrictions on external trade.

Security was identified as a serious issue in three of the villages studied (Okumi in Tkvarcheli district and Saberio and Mziuri in Gali district). The main problem is criminal groups who prey on villages close to the border area. Common problems include the burglary of valuables and cash crops from houses, the hijacking of public transport and the hijacking of vehicles engaged in trading, particularly those carrying hazelnuts and citrus. In one village there was also evidence of protection payments being made to provide 'safe' marketing of high value crops. Criminal incidents are not high but the potential impact on implementation of agricultural development activities is significant; for example many respondents were reluctant to consider activities that might increase their income and make them 'targets' for criminals.

There are regular UNOMIG patrols in all of Gali and Tkvarcheli districts and parts of Ochamchira. The patrols make contact with key informants in the communities in order to monitor the security situation and promote good relations. Security restrictions apply to the field activities of UNDP staff who are required to file advance itineraries for all field visits, check in by radio regularly, observe a dawn to dusk curfew and use two armoured vehicles for visits to areas considered high risk, i.e. rural Gali. The impact of patrols is not always positive; villagers can be accused of being "in the pay of" or "reporting on behalf of" UNOMIG thus limiting trust both within communities and between communities and other UN agencies.

During the period of this study the political impasse lead to a perceived threat of insecurity in the territory. As a result Russia began closing the border at night and more serious closures were rumoured. Trucks carrying tea and citrus were held up at the border. The potential for this type of instability is a most serious barrier to investment in agricultural development especially in respect to very perishable export goods such as fruit and vegetables.

### **8.2. Legal and Policy Framework**

The *de facto* Ministry of Agriculture does not yet have a clearly defined policy for guiding agricultural development. There is a focus on citrus linked to the importance of this crop in providing revenues that support the administration. Other issues highlighted by the ministry were tea, cattle breeding and processing but there is a tendency to emphasise large inward investment rather than any bottom up development in the sector. A significant role in production is still envisaged for the private sector with 'a balance' between private and public sector being pursued. Recently the government has started to support

private agriculture through the provision of credits for agricultural projects (e.g. 7 million Roubles (\$230,000 disbursed in Ochamchira in 2004).

At the district government level the Departments of Agriculture remain primarily oriented to the state farm sector, although in Ochamchira this is beginning to change as private sector credits are disbursed and more experience gained. The staff of the departments are technically competent but are not familiar with recent or alternative technological developments in agriculture and remain locked in to a hierarchical management structure which does not promote active dialogue between farmers and local government.

The legal situation in respect of agricultural production is not clear and there are no obvious boundaries regarding the development of business activities. Although land cannot be owned, leasing for up to 49 years is possible. There is no tax on primary production, but income tax is due on the income from sale of produce. Currently this is not enforced for small farmers. For legal entities the tax regime is more formal including land tax, income tax, and contributions to a pension fund if employment is involved. The types of agricultural entity described are: Renting Form (person rents land for production), Mixed Form (production and processing together usually with public sector interest) and Cooperatives. There are incentives e.g. a three-year tax holiday for new enterprises, but so far the only credit specifically aimed at agricultural development is provided by the state from the privatization fund.

### **8.3. Related Development Initiatives**

#### **ACH agricultural projects in Gali, Tkvarcheli and Ochamchira, funded by ECHO, WFP and SDC.**

ACH is implementing the WFP food-for-work project in villages in the Gali, Tkvarcheli and Ochamchira districts. One of the project's objectives is to improve the food security status of vulnerable families through the rehabilitation of agricultural production and food distribution. The project aims at improving irrigation systems and agricultural access roads and to reclaim arable land, through community mobilisation. Besides the food distribution, the project also facilitates the distribution of non-food items in the form of fencing materials, diesels for machinery, agricultural tools, gloves, boots, and others.

This organization is also implementing a 12-month project, funded by the European Commission Humanitarian Aid Office (ECHO) (and co-financed by SDC) that aims at improving the food security of 800 vulnerable families from Ochamchira, Gulprish, Tkvarcheli and Gali Districts, as well as from Samegrelo Region (Georgia proper). The program is developing agricultural production and income generation activities (IGAs), including bakeries and shops, cow, sheep and pig breeding, apiculture etc. The activities are being implemented under a cooperative type system which takes into account the vulnerability of beneficiaries. Networking between IGA participants and other service providers and marketing analysts are envisaged to improve the profitability of the aforementioned activities.

#### **Premiere Urgence ECHO project in Gulripshi**

Premiere Urgence is an international NGO implementing an ECHO funded project aiming to refocus from the direct food aid (provided by ICRC) to demand oriented income generation activities. The project is targeting 300 families in Gulripshi district with support to small businesses based on selling in Sukhumi market. The project concentrates on assisting households to understand decision-making processes and the market economy. Project services are provided on demand and include assistance to develop a business plan and a package of inputs up to \$500. The NGO is also promoting group projects of up to 15 families which can access a package of up to \$2300. Projects have included chicken, turkey, potatoes and honey production. The project ends in August 2005 but Premiere Urgence expects to access follow up funding from ECHO and expand the project westwards.

## **9. Conclusion**

This study has sought to obtain an improved understanding of the rural economy in Ochamchira and Tkvarcheli and to a lesser extent, Gali. In addition, it represents one of the first attempts in post-conflict Abkhazia to locate knowledge about rural livelihoods within the legal and economic dimensions which form the Abkhaz political economy. While the exercise generated a wealth of understanding about how people have established livelihoods and in what way these might be improved, the findings also indicate that the expansion of agriculture is constrained by the lack of reliable access to external markets. Much more work needs to be done to understand micro-macro linkages.

Abkhazia is region of abundant natural resources and a good climate. But the rural economy continues to suffer from the consequences of conflict. There is a large amount of abandoned land which continues to deteriorate through lack of use. The costs of bringing it back into cultivation increase with time. There is a need to develop a more coherent approach to livestock management as part of any policy to reclaim abandoned land so as to ensure that grazing practices do not conflict with agricultural expansion. The lack of farm power and inadequate fencing are major constraints to agricultural production as is the demographic structure of a region where young people have simply voted with their feet and left the countryside.

There was observed to be strong community cohesion in a rural economy characterised by high levels of self-sufficiency. A large part of maintaining rural livelihoods rests on women. They are involved in reproductive and productive activities as well as in marketing. Care needs to be taken that interventions increase opportunities for women but do not further increase their burden. While diverse farming practices and livelihood strategies produce a measure of resilience, households operate on very slender margins and are vulnerable to shocks associated with disease and adverse weather. High labour requirements further marginalise vulnerable households. Import substitution of agricultural/livestock products could provide income generation opportunities for rural households but is limited by a small internal market. Nevertheless, there is a basis for the development of rural livelihoods. It requires a mixture of credit and grants, the provision of appropriate support services and measures to assist with income diversification.

While people have received a good education, much technical knowledge is outdated and there is little understanding of the market economy. Markets for agricultural produce seem to operate effectively. To assist people in better calculating the risks and advantages of marketing strategies, there is a need for a detailed commodity/market analysis. In depth market studies should precede any programme support to small scale processing activities. Farmers require a wide range of assistance in updating agricultural practices and in engaging with the market. However, the environment for agricultural development is highly problematic. There is a lack of support services for input supply, finance, information and technology. These are prerequisites for any form of agricultural development. In addition, staff of district agricultural departments are poorly resourced and lack motivation. They require much capacity building.

The absence of any clear government policy towards agriculture, coupled with an inadequate legislative framework and dubious regulatory practices, inhibits the transition to a market economy. This becomes evident when examining rural land tenure which permits households only access to sufficient land for them to survive, but not sufficient for them to thrive. Access to additional land and resources to generate income is closely controlled by the state and only goes to those with connections to the state *apparatus*. Any agricultural development requires equitable access to land by means of transparent rental procedures and the enhancement of local government capacity to administer this.

This report has sought to describe the rural environment in three districts of Abkhazia. Attention needs to be drawn to the importance of intervening agencies, such as the United Nations, having adequate coordination in respect to planning and implementation of an agricultural programme. In conclusion, there are also a number of security-related issues to be noted: a) If increasing assets leads to a decrease in security then agricultural development is inappropriate and the programme should focus on vulnerability reduction b) Participative programming cannot effectively take place in circumstances which require the use of armoured vehicles c) Effective development work requires flexibility and the delivery of timely

responses. For this to occur in these districts of Abkhazia, a further examination of the security situation and the UN security regulations is required by the UN.

## Annex 1

### Size and Ethnicity of the Villages in the Study

The number of households in the villages studied ranged from 151 (Labra) to 630 (Kutol) (Table 4.) and encompassed a range of ethnic compositions including predominantly Abkhaz (Kutol), mixtures of Abkhaz and Georgian (Agubedia, Kindgi, Tamish), Armenian (Labra) and predominantly Georgian (Okumi, Mziuri). In all villages the population was significantly reduced compared to period immediately prior to the Abkhaz conflict with current household numbers ranging from 27% (Labra) to 87% (Saberio) of pre-conflict levels (Table 4.). The relatively high figure for Saberio reflects the considerable level of returnees in this village close to the river, although this is confounded by the significant number of families which spend the summer in Saberio and return to Georgia during the winter. Returnees to village Okumi were also reported as increasing significantly.

<b>Village</b>	<b>Population Now</b>	<b>Households No. Now</b>	<b>Household No. Pre-conflict</b>	<b>% households remaining</b>
<b>Kutol</b>	No data	630	920	68
<b>Labra</b>	700	151	550	27
<b>Tamish</b>	No data	217	600	36
<b>Agubedia</b>	850	271	375	72
<b>Kindgi</b>	1100	270	No data	-
<b>Okumi</b>	2000	530	900	59
<b>Mziuri</b>	1500	350	650	54
<b>Saberio</b>	3670	627	717	87

**Village estimates of population and household number.**

## Annex 2

### Summary of the Main Elements of the Farming System

#### Crop Production

##### Maize

Maize commonly occupies 50% of the household's land and is usually grown in corn lands separate from the house. The origin of current varieties is not clear but no new varieties have been introduced in the last 15 years. There are different varieties with long medium and short growing seasons (150, 120 and 90 days) but mixtures are common, as all seed is farm saved and opportunities for mixing are high. Corn land is ideally ploughed twice, once in early spring and then again 2-3 weeks before planting, but most farmers can afford to plough only once. Planting is by hand in late April or early May after which plots may be rolled or harrowed. The crop is usually weeded twice by hand or using horses and cultivators if available; Nitrogen fertiliser (when used) is applied after each cultivation at the rate of 150 to 250 kg per Ha. The crop is harvested by hand in October and November.

Reported yields vary from 2.5 to 7 tonnes per Ha but this year late planting and rains reduced yields by up to 60%. The main problems with the crop are inadequate fencing of lands, shortages of machinery leading to untimely practices and occasional insect infestations that occur after late planting or during very hot and dry summers - pesticides are rarely applied to the maize crop.

Some farmers sell surplus corn others reported only growing enough for their own consumption since the crop is labour intensive and market prices are low. In the household corn stored in specially constructed above ground stores and when required is roughly ground for both human and animal consumption. Maize straw is harvested for winter fodder and stored in ricks hanging from trees or poles in the field or in empty houses or barns.

##### Phaseolus Beans

Phaseolus beans (probably *Phaseolus vulgaris*) are usually planted together with the maize in a mixed crop the nitrogen-fixing legume thus improving available nitrogen in the soil for the maize. Only 20 to 80% of the crop is mixed since the beans climb up the maize stalks affecting the palatability of the straw and increasing the likelihood of lodging. Named varieties were not mentioned but two distinct types were discerned small round whitish seed (the best quality) and larger seeds spotted red, green or black. Seed are all farm saved. Since it is planted with maize all cultivations are the same but a portion of the beans may be harvested early to eat as green vegetables.

The problems of fencing and machinery apply equally to beans and in general farmers regarded it as a more difficult crop to manage. Some have had problems with germination and in general the bean crop is much less resistant to drought than the maize. Beans are primarily used for human consumption and farmers occasionally sell surpluses in the market.

##### Vegetables

Between 15% to 25 % of lands are utilised for vegetables which are grown on the household plot. Farmers producing vegetables as a cash crop (e.g. Labra) may grow vegetables on a higher proportion of lands. A wide variety of vegetables are grown including; potato, kohlrabi, cucumber, tomato, cucumber, aubergine, pumpkin, garlic, chilli pepper, green pepper, onions, herbs and melons. Vegetable seed is mostly farm saved but farmers

occasionally buy in new seed from local markets. Farmyard manure is used as a priority on the vegetable land and additional Nitrogen fertiliser may be applied if required.

Vegetables are primarily grown for home consumption but a range of practices occur from no selling of vegetables to selling of increasing proportions and producing solely for sale. Melons and watermelons in particular can be regarded as a predominantly cash crop. No particular problems were mentioned in respect of vegetable production except when excessive rains occur causing rotting. Certain vegetables are pickled or bottled for winter consumption, but only very small amounts of pickles are marketed.

## **Livestock Production**

### **Cattle**

Cattle numbers per household are summarised in Table 12 most households have less than 5 animals including 1-3 productive cows and 1-2 calves or growing heifers. The animals are variable in appearance but clearly originate from a hardy local breed that has over the years received occasional genetic "inputs" from improved breeds. During the spring, summer and autumn animals graze freely on roadsides and abandoned lands or occasionally in more organised pasture areas, grazing of animals in abandoned tea plantations is common. In the winter animals are housed and fed on corn straw, hay and corn meal when available.

There is little or no control over mating since un-castrated calves and some bulls run freely with cows during grazing and farmers rely on natural heat detection and mating. Calves are born throughout the year, but births in May to September are preferred as more food is available to support lactation. A problem of the uncontrolled mating is that opportunities for pregnancy can sometimes be missed resulting in a serious loss of production. Serious diseases are uncommon and farmers mostly treat animals curatively, they do treat preventatively if outbreaks of infectious disease occur in the locality. Losses due to mining accidents - once a serious problem - are now declining as minefields are cleared.

Milk yields vary from 2 to 4.5 litres of milk per day and lactations commonly last for 8 months although may stretch to 10 months if there is no follow on pregnancy. A small proportion of the milk is often saved for direct consumption by the children; the remainder is used to produce cheese, yoghurt and occasionally butter. If there is sufficient surplus cheese may be smoked for winter consumption. Dairy products are primarily produced for home consumption but a range of practices occur from no selling of dairy products to selling of increasing levels of surplus. One female respondent reported buying milk from others to produce cheese for selling only.

After initial fattening, male calves are usually sold for meat to butchers in the local market this avoids the burden of feeding non-productive animals. Late born male calves (after August) may have to be over-wintered or sold live. Heifer calves are kept for milk production or sold on live if the household has insufficient resources to feed an additional animal.

### **Buffalo**

Buffalo are much less common than cattle (see Table 12.) and are restricted to the lower warm coastal plain area. They are Caucasian riverine water buffalo a variety of Asian Water Buffalo and are a relic of earlier farming systems before the marshy coastal plains were all drained. The main reason for their continued use in the farming system is the high fat content of the milk which is valuable for cheese and butter production. Management is similar to that described for cattle but they require wallowing areas in summer and are much less tolerant of poor nutrition. They are susceptible to the major infectious diseases and sudden death of animals is not uncommon. Milk yields are higher at 5-6 litres per day and lactation periods the

same length or slightly shorter compared to local cattle. As with cattle male calves are usually sold for meat after a short period of fattening.

### **Pigs**

Most households have less than 5 animals including 1-2 productive sows and 1-2 hogs for fattening, maybe a young gilt for replacement stock some young piglets for sale or home consumption. Phenotypes are variable but most originate from local hardy stock and there is less evidence of improved genetic types compared to cattle. Animals graze freely, but are usually housed at night especially in forest areas where there is risk of wolves and jackals. Foraging may be supplemented with kitchen or garden waste or whey and in the winter foraging is supplemented with corn meal. Mating often occurs naturally during free foraging but if a farmer spots an oestrus he will make effort to ensure the sow is brought to the boar or vice versa. Pig diseases occur sporadically and outbreaks of swine fever have occurred in the recent past. As mentioned pigs are at risk of prey animals and damage or death by road traffic is common.

Most farmers reported only single litters per year usually of around 7 -12 piglets. Piglets are usually retained for home consumption, fattening or reproduction but there is a ready market for surplus piglets (1.5 – 2.0 months) as meat. Most households with pigs will retain one fattened hog and smoke it for winter consumption.

### **Poultry**

Almost all households have some poultry usually around 25-30 animals. Chickens are most popular but mixture of chickens, turkeys, ducks and geese are common. Animals graze freely within the garden and this is supplemented with kitchen and garden waste and maize grain in the winter. Mating is natural; in some villages fertile eggs are collected and taken to a hatchery service (e.g. in Gali town) to reduce the risk of losses in natural incubation. Infectious poultry diseases such as fowl-pest do occur, preventative measures are not taken routinely but birds are vaccinated if an outbreak occurs in the locality. Households rear poultry for eggs and meat for consumption, surpluses when available are sold or bartered locally or taken to the market. Poultry are a common gift on ceremonial occasions in the village.

### **Trees**

#### **Citrus**

The most common citrus grown is an old Chinese variety of mandarin introduced over 100 years ago. As well as the few large state owned plantations many households with suitable land have small citrus groves in their gardens. The citrus cannot be grown successfully everywhere and prefer south facing slopes or low areas close to the sea where the risk of cold or frost damage is low. Trees are propagated by grafting cuttings onto wild rootstocks. Nurseries were once widespread but now farmers mostly buy new stocks originating from Georgia or Russia. New plantations will start to fruit after 4-5 years and reach full production after around ten years; plantations can remain productive for over 80 years. Yields in the past reached over 70 tonnes per Ha, but 16 – 25 tonnes per Ha is more common now. The crop is susceptible to a number of insect pests and extensive pesticide regimes were once the norm, currently little or no pest control is practiced.

#### **Hazelnut**

Hazelnut is principally a private sector crop and there are no large state plantations. There are a range of varieties but farmers are mostly expanding production by the planting of runners

from existing plantations. Around 600-700 trees are planted per Ha and will start to produce around 2-3 years after planting; they will reach full production after 4 years. Trees may dip in productivity after 10 -15 years and can be heavily pruned to revitalise them. Older trees yield only 2-3 kg/tree while trees in good condition will yield 5-6 kg/tree. Wet and very cold springs can damage fruit set and applications of fertiliser are required in order to get good yields. The crop is harvested in August and September and usually stored in order to take advantage of increasing prices, however this needs to be balance against decreasing weights due to moisture loss in store.

### **Other Fruit Trees**

Fruit trees are an integral part of the subsistence farming system occupying between 10 to 20% of the household land. A wide variety of fruits are grown including grapes, persimmon, apples, pears, feijoa, peaches, figs and plums. Few problems were mentioned in relation to fruits but plant parasites were reported a problem in lower areas. Fruit are grown mainly for household consumption; surpluses may be sold but also may simply be used as animal feed. Grapes are used both as fresh fruit and for wine production and apples are favoured as a fruit for winter storage and consumption. Fruit are also processed in the home for later consumption this includes bottling and jam making, these products are only very occasionally sold in the market as all households produce similar products. One farmer with a large fruit tree plantation sold a high proportion of his crop and regarded it as very profitable.

### **Firewood**

Firewood is the major source of energy for heating and cooking and collecting of firewood is a regular activity. Households collect wood from civic usage forests which are theoretically managed by the village administration and designated for community use. Forest resources are relatively abundant in relation to population levels and no respondent reported difficulty in accessing wood, but the labour and transport for collection are represent significant demands on the household especially where resources are some distance from the village.

**Annex 3**

**Distribution of significant labour peaks for men and women in eight villages (combined men and women data)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Kutol m f</b>				cultivate	plant	cultivate	fertiliser	timber		harvest		
<b>Labra m f</b>			plant	plant	plant	cultivate		cultivate	harvest			
<b>Tamish m f</b>	plant preparation		plant	plant	plant		weeding		harvest	harvest		
<b>Agubedia m f</b>			cultivation	plant	plant	cultivation	cultivation		harvest	harvest		
<b>Kindgi m f</b>			cultivation	plant	plant	cultivation	fertiliser	harvest		harvest	harvest	
<b>Okumi m f</b>				plant	plant		cultivation			harvest	harvest	
<b>Mziuri m f</b>				hard work	plant	cult/fert				hard work		
<b>Saberio m f</b>			Plant	plant	cultivation	cult/fert		harvest	harvest	harvest	harvest	

## Annex 4

**Distribution of significant household income over the year in eight villages (combined men and women data)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Kutol</b>							vegetables	vegetables hazelnuts	fruit hazelnuts	fruit hazelnuts	citrus	
<b>Labra</b>	citrus					vegetables	vegetables	vegetables		fruit citrus tobacco	fruit citrus tobacco	fruit citrus tobacco
<b>Tamish</b>									fruit	fruit corn hazelnuts	fruit, corn, meat hazelnuts	hazelnuts
<b>Agubedia</b>								hazelnuts	hazelnuts		citrus	citrus
<b>Kindgi</b>						vegetables	vegetables	vegetables fruit, melon	hazelnuts	corn	citrus	
<b>Okumi</b>							corn, beans hazelnuts	corn, beans, hazelnuts		citrus	citrus	
<b>Mziuri</b>								hazelnuts	fruit, corn, hazelnut	fruit, corn, hazelnut	corn, hazelnut	hazelnut
<b>Saberio</b>									fruit, corn, hazelnut	fruit, corn, hazelnut	corn, hazelnut	hazelnut

## Annex 5

### Distribution of significant household expenditure over the year in eight villages (combined men and women data)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Kutol</b>			fuel C <sup>1</sup>	fuel C	fuel C fertiliser	fertiliser	fertiliser	school prep	fuel	fuel	spending income	sending income
<b>Labra</b>		seeds	fuel C	fuel fertiliser plastic	Fertiliser	fuel C tractor		school prep		fuel plastic	fuel	new year
<b>Tamish</b>				fuel C tractor fertiliser	fuel fertiliser seeds	fuel fertiliser seeds	fuel C tractor	school prep	fuel	fuel T <sup>2</sup>	fuel T	new year
<b>Agubedia</b>				fuel fertiliser		fuel C fertiliser	fuel C fertiliser	school prep preservation <sup>3</sup>	fuel wine	fuel T		
<b>Kindgi</b>				fuel C tractor fertiliser	fuel C tractor fertiliser	fuel C fertiliser		school prep preservation	fuel	fuel	fuel T	new year
<b>Okumi</b>	fertiliser			fuel fertiliser	Fuel fertiliser			school prep	fuel T	fuel preservation weddings	fuel fertiliser weddings	new year
<b>Mziuri</b>				fertiliser	Fertiliser	fertiliser		school prep	preservation	fuel T, fuel preservation	fuel T fuel	
<b>Saberio</b>	health	health	health fertiliser	fuel C tractor	fuel C tractor	fertiliser	fertiliser	fertiliser, school prep	ceremonies	ceremonies	ceremonies	

Shaded areas indicate periods where food or fodder normally produced on farm may have to be purchased from outside

<sup>1</sup> fuel C is fuel expenditure for cultivation

<sup>2</sup> fuel T is fuel expenditure for timber collection

<sup>3</sup> preservation is bottling of fruits, jam preparation, etc.

## Annex 6

### Main skills, trades and professions revealed in the village appraisals

District/Village	Human Capital Assets
<b>Ochamchira District</b>	
Kindgi	45% of population are “youths”. Children go to village school. Skills: drivers, economists, agronomists, accountants, mechanics, engineers, builders, electricians, nurses, cooks teachers. <b>Active expertise:</b> tea production teaching, tourism, out of season vegetables and shop-keeping.
Kutol	Children go to village school or to Tamish school. Skills: agronomist, economist, accountant engineers, builders, machine operators, medics, teachers, traders. <b>Active expertise:</b> teaching, veterinary, midwives, tea production, shop-keeping, carpenter, craft skills (brushes and baskets), baker.
Labra	Children go to village school (but poor conditions). Skills: teachers, machine operators, builders, lathe operators, carpenters, barbers, agronomists, lawyers, traders. <b>Active expertise:</b> teaching, shop-keeping, out of season vegetable production.
Tamish	Children attend village school. “Young people are leaving. Many widows in the village” Skills: roof-tinner, agronomist, cattle breeders, builders, poultry farmers, machine operators, teachers, nurse, economist, mason. <b>Active expertise:</b> nurses, teachers, engineers, traders, apiculture, shop-keeping.
<b>Tkvarcheli District</b>	
Agubedia	Children attend village school. Skills: machine-operators, cattle breeders, agronomists, teachers, nurse, midwife, electricians, bakers, barbers traders, shoemakers, tailors, engineers, drivers. <b>Active expertise:</b> teachers, baker, shopkeeper, builder, blacksmith, road repair, midwife, traders.
Okumi	Population increasing (returnees). Children attend village school. Skills: technologists, agronomists, veterinarian, nurses, teachers, engineers, lawyers, machine-operators, accountants, carpenter. <b>Active expertise:</b> teachers, tea production, business, nurse, TV repair, electrician, timber processing, hairdressing, doctor, traders.
<b>Gali District</b>	
Mziuri	Population increasing (returnees), but youth is leaving. Children attend Gali kindergarten and local school. Skills: doctor, agronomist, machine-operators, accountants, lawyers, teachers, plumbers, electricians, blacksmith, carpenters. <b>Active expertise:</b> teachers, electrician, military service (Georgian), traders.
Saberio	Young people are leaving. Children attend village schools. Skills: agricultural technologists, machine operators, milkmaids, cattle breeders, lathe operators, carpenters. <b>Active expertise:</b> shopkeepers, machine-operators, kindergarten teachers, teachers, barber, nurses, doctor, traders.

## Annex 7

**Number of hours per day spent on reproductive and productive tasks by men and women. (summary of data from day clock provided by gendered groups)**

Village	Female						Male					
	Reproductive		Productive		Total		Reproductive		Productive		Total	
	now	busy	now	busy	now	busy	now	busy	now	busy	now	busy
Kindgi	3.5	1.5	7.5	9.5	11.0	11.0	0.0	0.0	8.0	13.0	8.0	13.0
Mziuri	4.0	2.0	6.5	10.0	10.5	12.0	1.0	0.0	4.0	10.0	5.0	10.0
Labra	4.0	2.0	5.0	9.0	9.0	11.0	2.0	0.5	7.0	12.0	9.0	12.5
Okumi	5.5	3.0	6.0	9.5	11.5	12.5	1.0	0.5	9.0	10.0	10.0	10.5
Saberio	5.5	4.5	5.5	6.5	11.0	11.0	0.5	0.0	6.0	9.0	6.5	9.0
Kutol <sup>1</sup>	-	-	-	-	-	-	2.0	0.0	9.0	13.0	11.0	13.0
Agubedia <sup>2</sup>	6.0	-	6.0	-	12.0	-	1.0	0.0	8.0	12.0	9.0	12.0
Tamish	4.0	3.5	6.0	9.0	10.0	12.5	1.0	1.0	10.0	12.0	11.0	13.0
Mean	4.6	2.8	6.1	8.9	10.7	11.7	1.1	0.3	7.6	11.4	8.7	11.7

## Annex 8

### A summary of infrastructure information from village appraisals.

Village	Physical Infrastructure
Kindgi	School with 80 pupils, 7 shops, 2 vegetable greenhouses, 1 health resort, petrol station, 6 old tractors, roads are in bad condition, electricity supply is not reliable, river banks need improving, water from deep wells need rehabilitation, Derelict or destroyed infrastructure – 2 schools, 2 kindergartens, 3 resorts, tea factory, farm school, telephone exchange, ambulatory, poultry farm, 2 clubs
Kutol	School 48 rooms and gym, functioning ambulatory, working tea factory, bakery, 12 small shops, 12 small grain mills, 1 bridge being repaired 2 need repair, some rehabilitation of roads, electricity supply OK but need transformers, administration building, river banks need attention, need fencing for corn Derelict or destroyed infrastructure – primary school, livestock farm (being renovated privately)
Labra	School poor condition 41 pupils, 2 grain mills, 2 small shops, partially functioning bakery, roads are in poor condition, electricity ok, 6 tractors (private), no ambulatory, river breaks its banks annually, one suspension bridge an very bad state, central water supply functioning. Derelict or destroyed infrastructure – administration building, club, kindergarten, telephone exchange, car workshop, library,
Tamish	School renovated, boarding school, ambulatory, bakery, 3 tractors, 3 grain mills, 4 shops, petrol station (currently not working), 4 bridges OK one bridge needing repair, need to improve of riverbanks, electricity ok, transformers purchased with common efforts, central water supply damaged by river, lack of fencing for corn Derelict or destroyed infrastructure – 2 greenhouses, dairy farm, rose plantation, aromatic oils plant, bread factory, alcohol factory, asphalt factory.
Agubedia	1 school 90 pupils, bakery, 1 shop, half-built clubhouse, 1 grain mill, one blacksmiths workshop, warehouses, administration building in very poor condition, ambulatory, roads are in very poor state, use wells for water, 6 tractors (no spare parts), river is eroding land, 3 functioning bridges, 2 bridges under damage threat, lack of fencing for corn. Derelict or destroyed infrastructure – car workshop, shops, social service office, livestock farm, centralised water system, telephone exchange.
Okumi	School – some rehabilitation, state farm and tea factory, hospital, bakery, 4 grain mills (also many household mills), 2 timber processing factories, nut processing plant, 4 tractors, club, 1 bridge requires rehabilitation, river banks need reinforcing, road to Tkvarcheli in bad state. Derelict or destroyed infrastructure – kindergarten
Mziuri	School, kindergarten, 3 grain mills, 3 small bridges requiring repair, central water supply not working, few tractors, electricity ok but transformer needs repair, lack of fencing for corn Derelict or destroyed infrastructure – dairy farm,
Saberio	2 secondary schools 1 rehabilitated, 6 bridges in bad condition, 20+ shops, 3 or more grain mills, few tractors with no spare parts, hospital, kindergarten, half built lemonade factory, water is a mix of piped water, wells and collection from river, electricity OK Derelict or destroyed infrastructure – silk factory, tobacco farm, tea factory

## Annex 9

### Main income sources mentioned in the village appraisals

	Sale of surplus produce	Cash Crops	Employment	Remittances	Other Business
<b>Kutol</b>	Vegetables, chickens, pigs, meat, tomatoes, fruit	Hazelnuts	Teaching, tea production, livestock farm	Russian Pensions Abkhaz pensions	Shop keeping Brooms, baskets, honey production Machinery services
<b>Labra</b>	Cheese, fruit, vegetables	Tobacco, hazelnut, citrus, vegetables Hazelnut, water melon	Teaching	Pensions	Shop keeping, machinery services
<b>Tamish</b>	Corn, vegetables, chickens, piglets, meat, fruit, dairy products	Hazelnut, water melon	Teaching, nurses, Halo Trust,	Pensions, ICRC (in kind)	Shop keeping, Jams, brooms, sewing and knitting, honey production, machinery services
<b>Agubedia</b>	Meat, dairy products	Hazelnut, citrus	Teaching	Pensions, ICRC (in kind)	Machinery services, honey production.
<b>Kindgi</b>	Chickens, persimmon fruit, vegetables, herbs, meat, pigs	Hazelnut, citrus, water melons	Health resort, teaching, WFP food for work, seasonal citrus harvest.	Pensions, ICRC (in kind)	Shop keeping, cooked meats, wine, machinery services
<b>Okumi</b>	Beans, corn, chickens, eggs, piglets, turkeys	Citrus, hazelnut	Tea factory, hospital, timber processing, electrical services, teaching	Pensions, IDP payments	Shop keeping, electrical services, machinery services
<b>Mziuri</b>	Meat, cheese, piglets, chickens, salad vegetables	Hazelnut,	Teaching, employment in Gali	Pensions, IDP, payments, ICRC (in kind)	Shop keeping, ACH projects, machinery services
<b>Saberio</b>	Fruits, cheese, corn, beans, piglets, meat	Hazelnut, citrus	Teaching, hospital, Power station,	Pensions, IDP payments	Shop keeping, machinery services

## Annex 10

**Loan size and loan purpose for borrowing between neighbours and relatives in five villages.**

<b>Village</b>	<b>Loans size</b>	<b>Purpose</b>
<b>Labra</b>	\$170 - \$340	Agricultural inputs, weddings, funerals, citrus trees, Russian passport
<b>Agubedia</b>	\$17 - \$34	School costs, cultivations, agricultural inputs
<b>Kindgi</b>	\$100 - \$170	Essential foods, fuel for cultivation, agricultural inputs
<b>Mziuri</b>	Up to \$100	Essential foods, weddings, agricultural inputs
<b>Saberio</b>	\$50 - \$500	Fuel for cultivation, health costs, higher education, agricultural inputs.

## Annex 11

### Social Assets identified in Village Appraisals

<b>Kutol</b>	Village council, tea picking brigades, received local and central government support for rehabilitation, good intra and inter village relations, social links with other villages (weddings, funerals), those in Sukhumi return to assist in harvest, loans between neighbours, provided support to Gudauta region in drought
<b>Labra</b>	Village council, agro-farm brigades (tobacco), no support from district government, links with UNHCR (rehabilitation) and Halo Trust (demining), good relations with neighbour villages – weddings, funerals, share spare parts, rehabilitation of bridge with communal efforts, loans between neighbours
<b>Tamish</b>	Village council, building brigades, UNOMIG repaired local bridge, local and central government support for rehabilitation, assistance from ICRC, strong links with Halo Trust (based in the village), family relations with other villages, provided support to Gudauta region in drought, good intra village relations, loans between neighbours
<b>Agubedia</b>	Village council, repair of roads with communal efforts, villagers help each other socially without charge, loans between neighbours, local and central government support for rehabilitation, support from ICRC, demining by Halo Trust, good relations with other villages – weddings, funerals, loans between neighbours
<b>Kindgi</b>	Village council, local government support for rehabilitation, humanitarian support from ICRC, group working with WFP, Halo Trust demining, good and stable relations with neighbouring villages, provided support to Gudauta region in drought, rehabilitated school by communal efforts, good village relations helping each other, loans between neighbours
<b>Okumi</b>	Village council, tea and citrus brigades, financial support from district government, poor transport linkages with Sukhumi and Tkvarcheli, services provided to neighbouring villages, people helping each other within village, young people return to help with harvest, poor security – no policeman, loans between neighbours
<b>Mziuri</b>	Village council, occasional brigade working, local government support for rehabilitation, communal efforts to support kindergarten, humanitarian support from ICRC, social services available in Gali, ACH/WFP group projects, youth is leaving, poor security neighbourhoods get together for protection, loans between neighbours
<b>Saberio</b>	Village council, financial support from district government, support from UNHCR for rehabilitation, family relations with other villages, little external help, youth are leaving, poor security, loans between neighbours. Could provide communal effort for water supply.

## Annex 12

### Needs and opportunities identified in village appraisals and gendered discussion groups.

Village	Urgent Needs	Opportunities	
		Women	Men
<b>Kutol</b>	Clean riverbed, bridge repairs, roads repair, transformers, new seeds, new breed of cattle, tractors, health services, stadium rehabilitation, fertilizers, kindergarten, auto shop.	Potato production, vegetable production, green house production, (hot spring), rehabilitation of club, incubator for poultry, pig farm, animal fodder, driver's classes (for youth)	Fish farm, cattle breeding, pig Farm, apiculture, vegetable growing, social services, trade, center for youth, river bank reinforcement, rehabilitation of the agricultural lands, road rehabilitation, financial support, rehabilitation of sewing factory, farm machinery.
<b>Labra</b>	Medical service, vet service, riverbank reinforcement, farm machinery, finance, bridge repair, support for potato production.	Marketing systems (wholesale), tobacco production and marketing, livestock and fruit (private sector), information about animal health, cultivation techniques and irrigation.	New varieties and seed of potato, vegetables, spare parts shop for tractors/ machinery. Machinery (plough, seed drill), fertilizers.
<b>Tamish</b>	Street lights on M-27 by school, electrical poles, milk farm, greenhouse repair, fencing of corn field, kindergarten, rose plantation, machinery, spare parts, kiwi, citrus, hazel to replace tea, vegetables, poultry, fish farm, sewage system, timber processing, stadium rehab.	Shops, sewing workshop, hairdressing, kindergarten, pig farm, chicken farm (need incubator), machinery repair shops.	Cattle breeding, pig farm, poultry farm, hazelnuts, kiwi, sausage production, rabbit breeding, apiculture. Meat and dairy production, alcohol drinks.
<b>Agubedia</b>	Fencing for gardens and fields, river bank repair, bridge repair, telephone communication, bakery, pesticides, potatoes production, fruit, fish farm	Finance, fertilise, trading, water supply, school roof, hazelnut, citrus, cattle, transportation of production to Psou, need for mid-traders.	Increase citrus and hazelnuts, rehabilitate bakery, pig farm, cattle farm, fish farm, build the gym, club for the youth, road rehabilitation.
<b>Kindgi</b>	Electrical wiring, transformers repair, veterinary service, riverbank repair, machinery, potato production, road repair.	Livestock, pig farm, fruit, small scale jam production, vegetables including greenhouse vegetable production, poultry farm, improved knowledge and skills on vegetables and animal.	Tourism (private), fruit gardens (persimmon, hazelnut, feijoa, citrus, melons), pig farm, green house, tractors and maintenance service, improve trade relations existing health resort.
<b>Okumi</b>	Reinforcement of riverbank, repair road to Tkvarcheli, rehabilitation of the kindergarten. Machinery problem, bridge repair	Incubator, pig-farm, chicken farm, green house production.	Development of tea, maize, nuts, citrus and apples, pig farm, chicken farm, tomatoes and cucumbers (greenhouse), fertilizer, credit, improved security needed
<b>Mziuri</b>	School transport, rehabilitation of kindergarten, transformer repair, fencing of the corn field, roads repair, spraying machinery, reinforce the river bank, improved security, bridge repair.	Hazelnuts, machinery, fencing, poultry farm, incubator, pig farm- Feijoa, Kiwi, persimmon, fruit tree planting material and machinery.	Employment, livestock farms and hazelnut farms use the deserted lands, private enterprise.
<b>Saberio</b>	Transformer replacement. Milk production farm, fencing, machinery	Fruit nursery, tomato and cucumber (greenhouse), tobacco, fertilizers, early vegetables, vineyard, mini-farm, pigs, poultry, hazelnuts.	Fruit orchards, juice production, cattle breeding, silk production – was famous in this area, tobacco, finance – credit.