

# AGRICULTURAL PRODUCTION IN ALBANIA SOCIOECONOMIC SURVEY, 1993-94

## SECTION I - SURVEY RESULTS



Funded by  
United States Agency for International Development (USAID)

Prepared by  
**Julio Henao**  
Senior Biometrician, IFDC



International Fertilizer Development Center (IFDC)  
and  
Directorate of Statistics and Information  
Ministry of Agriculture and Food (MOAF)  
Republic of Albania

September 1994

## **Acknowledgment**

This report was made possible through the professional input and excellent collaboration obtained from the following organizations and personnel. Their individual and collective contributions to this work is deeply appreciated.

### **Ministry of Agriculture and Food**

Shkelqim Agolli , Director of Statistics and Information  
Ylli Biqoku, Director of Animal Production  
Mynevere Rusi , Head of Economist  
Alfred Sopi, Specialist ASF  
Alban Hobdari, Specialist (Computer)  
Irena Peza , Computer Operator  
Dhurata Cenolli, Statisticien (Directory Agriculture Tirana District)  
Alma Katroshti, Statisticien (Directory Agriculture Tirana District)

### **Food and Agriculture Organization (FAO)**

Neil Chalmers, Statistics Consultant

### **International Fertilizer Development Center (IFDC)**

Ray B. Diamond, Chief of Party, IFDC/Albania  
Jimmy Brink, GIS Specialist  
Ilijan Bimo, Manager (MIS)  
Rexhina Malaj, Coordinator (Computers)  
Altin Gjika, Specialist (GIS)  
Ledio Lamani Assistant (MIS)  
Brizida Kadiu, Assistant (Credit)  
Elona Koçi, Coordinator (Publications)

AGRICULTURAL PRODUCTION IN ALBANIA  
SOCIOECONOMIC SURVEY  
1993-1994

Section I  
Survey Results

Content

Introduction .....	1
Overview of economic situation .....	1
The survey area .....	3
Stratum 1 .....	3
Stratum 2 .....	4
Stratum 3 .....	4
Stratum 4a .....	4
Stratum 4b .....	4
The survey objectives and the questionnaire .....	4
Survey results .....	5
Land distribution and use .....	6
Human resources .....	7
Household resources and farm assets .....	8
Production systems .....	9
Farm economics .....	11
Constraints in crop production .....	13
Fertilizer use .....	14
Institutional services .....	15

# AGRICULTURAL PRODUCTION IN ALBANIA SOCIOECONOMIC SURVEY 1993-94

## Section I

### 1. Introduction

Since 1991, Albania's agricultural sector has been assisted through the project, "Support to Restructuring Albania Fertilizer Subsector", implemented by the International Fertilizer Development Center (IFDC), and funded by the United States Agency for International Development (USAID). The main objective is to support and assist Albania's development of stable, viable agricultural production strategies and make a contribution that promotes and enhances a free-market agricultural sector.

In the context of serious constraints on availability and use of agricultural inputs in Albania, IFDC is conducting and promoting activities to facilitate the agronomic, economic, and social benefits of increasing and maintaining agricultural production through the use of fertilizers. Periodic socioeconomic surveys of the economies and prevailing circumstances of farming systems are important components of such activities and generate valuable information to government for monitoring and developing agricultural programs.

The main purpose of this report is to provide basic results from a survey conducted in Albania during April and May of 1994. The report contains updated indicators on agronomic and economic performance of farming activities which reflect the impact of government policies under a free market economic system. It provides the Ministry

of Agriculture and Food (MOAF) with factual information on the socioeconomic characteristics, farming practices, and the use of agricultural inputs during the 1993-94 cropping season. The data and report will also provide a basis for the establishment of agricultural information systems in the MOAF, and for determining and monitoring social and economic consequences due to agricultural input use interventions in subsequent years.

### 2. Overview of economic situation

Albania is in a transition process to a full market oriented economy. During the past three years, under a standby agreement with the International Monetary Fund, the Government has been implementing short and medium-term actions toward economic stabilization and restructuring programs. According to basic indicators the economy is showing signs of recovery. The real GDP has increased about 11 percent during 1993, after declining 30 percent in 1991 and 13 percent in 1992. It is expected to continue increasing at a rate of about 5 percent during the next four years (IMF unpublished data). The nominal GDP in 1993 was about US\$1.1 billion and is expected to reach about US\$2.0 billion in 1996. The GDP per capita was US\$110 in 1991, rose to US\$350 in 1993 and is expected to reach about US\$800 in

1996. The inflation rate has been reduced from 225 percent in 1991 to about 24.5 percent in the 1993 period and is expected to reach less than 12 percent in 1994.

Albania's economic recovery, as expected, should come initially from the agricultural sector. The agricultural sector in recent years accounted for about 20 percent of the total exports. The agricultural sector accounts for about 40 percent of the GDP (Table 1), in contrast with declines in industry and service sector outputs.

The primacy of agriculture in the economy and in the sustenance of the livelihood of the majority of the people is as true for Albania as it is for many other Central and Eastern European countries. The population of Albania, estimated as 3.4 million, is growing at a rate of 1.9 percent annually. The population density is about 4.7 persons/ha. About 66 percent of the population lives in rural areas of which 47 percent have been engaged in agricultural economic activities. In 1992, an estimated 750,000 people were employed in agriculture and forestry and an additional 100,000 in related sectors. Agriculture has also been traditionally the main source of employment in the country. The share of employment in 1981 was 49.8 in agriculture and 21.2 and 29.0 percent in the industry and service sectors respectively. This share has increased during the past years due to deterioration of its industrial base and only small increases in the service sector.

Albania has the potential to use its agriculture as the basis for sustained economic growth and development given its agricultural resource base, the potentially competitive agri-industry and, relatively well developed human resources. The total area of Albania is 2.8 million ha, of which 25 percent - about 700,000 ha - is classified as agricultural land suitable for annual and permanent crops. More than 100,000 ha of the total agricultural land has more than 25 percent land slope; mostly planted with tree crops. About 15 percent, or 430,000 ha of the total area, is pastureland and 40 percent is forest.

Agricultural land use in Albania for the period 1981 to 1993 is presented in Table 1. In this period,

the cultivated area for arable and permanent crops showed a decrease during 1991 and a small increase during 1992 and 1993 cropping seasons. Some reduction in cultivated areas have been observed for roots and tubers, pulses, and industrial crops. Permanent pasture area and fodder production have been increasing. Irrigated land has shown small increases. Crop productivity or crop yield has not changed significantly in the major food crops; in some industrial crops (i.e., sunflower, sugarbeet, and cotton) production has fallen drastically and productivity has decreased almost 50 percent. Agricultural production estimates for 1993 have shown some increases over 1991 production levels, but remain below 1989 levels. Production of the main agricultural commodities, except vegetables and livestock, are still about 20 to 30 percent below the 1989 levels.

Presently, the situation of agricultural production in Albania is characterized as highly diversified with no significant increases in productivity. Yields, despite small increases, still remain below those of neighboring countries, mainly due to management constraints, lack of skilled manpower, low use of fertilizers and other key inputs, and absence of marketing structures. In addition, farmgate prices are increasing at a much slower rate than farm inputs and overall consumer prices. While the economic recovery in the short and medium-term is based on the agricultural sector to assure food security and provide rural income and employment, the Government, in the short-term will have to face the following constraints: (1) a decline in food and agricultural production per capita in the country; (2) a decrease in crop productivity resulting in insufficient food production to meet increased demand; and (3) a decrease in arable area for crop production or livestock, undermining agriculture's capacity to cope with future food demand in the country.

In the short-term, the country will continue to face food crisis periods which will undermine food security and macroeconomic policies in Albania. This situation will persist in the future unless there are improved institutions to serve agriculture, improved services, conducive policies in food production and environment, and appropriate

infrastructure for processing, storage and marketing

The government is implementing policies which attempt major changes in the agricultural sector aimed to increase food and agricultural production and expand rural employment opportunities. Because of legal and institutional aspects involved, the implementation of these reforms have proceeded gradually. The effectiveness of some of these policies is now being reflected in some transformations of rural areas influencing farm income, rural employment, and the ownership and control of agricultural land. However, many other factors still constrain the growth of the agricultural sector and will do so for some time. Some of these constraints include relatively underdeveloped transport and communications infrastructure, lack of responsive financial markets, and a weak public and private sector implementation capacity.

Agricultural production over the next few years in Albania should be facilitated by conducive policies that promote efficient farming systems, facilitate an appropriate land distribution process, and promote adequate input and supply schemes in livestock and crops through the development of marketing systems and funding mechanisms supporting private producers. Agri-business activities like the processing industry need to rebound from their present difficult state. In the long term, prospective supply and demand conditions for agriculture, stable marketing channels, trade policies and comparative advantage will dictate land use patterns and farming activities and will evolve toward more efficient agricultural production systems. Also important are institutional changes in the public sector to strengthen the delivery of services such as extension and research.

Observations by government officers and donors indicate that toward the year 2000, under prospective government policies, agricultural output should increase by at least 7-8 percent per year to meet the increasing challenges in food nutrition, create employment, provide raw material for agri-industrial development, promote regional investment and development, and create foreign exchange. They predict that this increase will be four times quicker than the increase of the population over

the same period. This optimistic view will surely place Albania production of agriculture and livestock at the production level of the neighboring countries.

### 3. The survey area

The survey was conducted by officers of the Directorate of Statistics of the MOAF located in 25 of the 36 districts in the country (Figure 1). A total of 648 farm households were randomly selected across the country. The farmers were interviewed in a period of one month.

The sample for the survey is composed of farm households selected from strata covering the whole country. The sampling unit is the farm. A farm is considered as composed of the farm household, field crops, and livestock. The sample was obtained by selecting farmers from sub-sampled segments - aggregated group of farms - located in five main agricultural land strata of the country. The area sampling frame (Figures 2 and 3), constructed by the MOAF and IFDC during 1993, was used for selecting segments (Figure 4) and farm households. This area sampling frame is composed of five main strata. The strata are differentiated by topographic features that influence patterns of agricultural and livestock production in the country. Figures 5 to 8 are included to show related physical characteristics among strata, soils, climate, and production systems in the country. The total area of agricultural land covered by each stratum is presented in Table 2. Some key features of the strata are:

**Stratum 1. Coastal, low, and level land with highly intensive and diversified agriculture.** The soils of this stratum are fertile alluvial soils composed of light textures close to the present or ancient river courses and heavy soils further away, where finer material has been deposited. The climate is a Mediterranean type with relative hot/dry summers and cool/wet winters. The total agricultural land potentially available for intensive agriculture including tree crops, is 263,355 ha. The agricultural land is suited for growing citrus, vineyards, and small ruminants in the south and wheat, maize, a variety of

vegetables and cattle in the central and northern areas. Black and white cattle are predominant in those lowland areas. Maize and lucerne (alfalfa) are the main feedgrain and fodder crops.

**Stratum 2. The river valleys and the foothills with intensive agriculture.** Cash crops are common and have comparative advantages in those areas. This stratum also has a Mediterranean type climate. Rainfall is higher than in stratum 1, especially in the northern part, reaching about 2000 mm average annual precipitation. The climatic conditions are suitable for growing early varieties of winter wheat and for irrigated summer crops such as maize, tomatoes, and fruit crops. Out-of season potatoes are mainly grown in this area. Tobacco is an important crop in this area and is cropped in 3 percent of the agricultural land. The total agricultural land area in this stratum potentially available for intensive agriculture, including tree crops, is 177,334 ha. Livestock activities are concentrated in the production of milk, mainly from cows and small ruminants.

**Stratum 3. Upland hills with diversified agriculture.** This stratum covers areas with highly diversified agricultural systems for cultivation of summer crops such as sugarbeets, potatoes, and maize. Agricultural land in this stratum is also suitable for olives, vineyards, fruit trees, winter wheat, and winter forage whenever the topographic conditions and climate allow their cultivation. Production of permanent crops like vineyards, olives, and orchards offers a potential source of income in this area. Actually, most plantations are old and located in marginal areas where crop management is kept at minimum levels. The total land area in this stratum potentially available for intensive agriculture, including tree crops, is 171,000 ha. This is 14 percent of the land area in the stratum. Livestock production is based on the utilization of large

areas of rangeland for grazing sheep and goats. Sheep and goat milk and meat are the main livestock products.

**Stratum 4a. Low mountain areas with limited agriculture.** Production systems are not diversified and consist only of one crop and livestock. These areas are above 800 m altitude. Due to former government policies, wheat cultivation has been expanded on previously grazed land. Maize and potatoes are the principal crops in these lands. Potato production is undoubtedly an important agricultural activity in some districts in this stratum. Livestock production systems have great potential. Livestock production is based on small ruminants which produce meat and milk for farmer consumption and some extra cash. Some land is also used for hay production for winter feeding.

**Stratum 4b. High mountain areas with little or no agriculture.** This area is mainly covered by forest and pastures. Agriculture is very limited. Pasture-livestock-milk complex is probably the most promising activity to be developed in this stratum.

The distribution of the sample in the different strata is presented in Table 3. It is important to observe that instead of selecting farmers by district, the sample of farmers was done by restricting the random selection to within each of the five strata. Thus, most of the results and statistics produced characterize the physical production and socioeconomic conditions prevailing in the farming systems of the strata. It should be noted however, that the sample of farm households although not restricted, covers most of the districts, therefore, some statistics are being provided at district levels for general information. Care should be exercised in drawing general conclusions based on the district estimates.

#### **4. The survey objectives and the questionnaire**

The economic system that prevailed in the past

precipitated the agricultural production to unprecedented levels of low productivity. Concurrent with this situation, the centralism form of government promoted the use of biased information for decision processes and severely limited the conformation of reliable information systems and the structuring of national agricultural statistics supporting policy decisionmaking. Presently, the reforms in Albanian agriculture have created broad areas of need for information. The MOAF, Directorate of Statistics, is concerned and responding to these needs. This survey is an important initiative and support in this response. Main objectives of the survey include:

a). Provision of socioeconomic data from agricultural lands in Albania, suitable for identifying and appraising agricultural projects. Sound projects can only be designed if current and proposed situations are based on realistic pictures of the farm level situation. The use of farm level information is paramount in the restructuring and improving agricultural and livestock production and in providing agricultural processing services. Data on farming systems, and estimation of input-output relationships and farm-household economies are often important requirements to evaluate the use and need of key inputs in the coming agriculture changes in Albania.

b). Identification of services and research needs for supporting strategic and adoption of new technology. Information on farm input-output characteristics, together with farmer attitudes and constraints can be useful in identifying and targeting agricultural services as well as long-term strategic research.

c). Formulation and evaluation of government policies in the agricultural sector. These include different forms of interventions such as prices or subsidies for example. Given the rate of change in the Albanian economy, a sound data gathering and reporting system will do much to help government officers to monitor and analyze structural changes in agriculture, as well as to predict the possible

effects of proposed policy instruments.

The data collected in the survey included a comprehensive list of the kinds of information to be sought in future farming system surveys. This information and methodology will supplement new activities initiated by MOAF, concerning the establishment of a national agricultural statistical system. The questionnaire designed for this survey obtains data that characterize the farm, the farmer, the family, resource endowments, crop and farming systems, prices, costs, income, constraints in production, and resource use. The following data were recorded during the survey:

- Farmer identification and resources
- Demographic characteristics for the household
- Parcel size, land use, and field plot distribution
- Production constraints
- Farm inventory
- Field areas and potential use of irrigation
- Crop and tree production
- Livestock inventory
- Farm expenses
- Farm production
- Fixed and variable costs of production
- Farmer source and use of information
- Use of mineral fertilizers and manure

Interrelation amongst the different types of data is presented in Figure 9. A detailed explanation of the data collected, details of collection methods, coding and conformation of an information system are presented in separate sections (II and III).

## 5.0 Survey results

Main results of the survey have been assembled and summarized in several tables. The purpose of this report is twofold, first, to provide an indication of the type of data collected, the methodology of analysis, and basic inferences from them and second, to provide a general view of the actual situation of the rural areas in the country. The information collected covers many topics and activities that characterize farming systems

in Albania. This information is quite relevant for the government to evaluate changes after three years of policy implementation. Certainly more analytical and inferences can be made from the data collected in this survey.

The tables included contain statistics and indicators on the social and economic situation of the farmers in Albania. Since the sample contains farmers primarily selected from five strata, most of the estimates and statistics are provided at stratum level. A particular characteristic of the strata is that they are pieces of land covering the whole country where similar entities of farm-household systems exist. The differentiating physical characteristics of each stratum are the topographic features associated with them such as low-lands with intensive agriculture, hill sides with intensive and highly diversified agriculture and diversified livestock systems, and mountainous areas with subsistence agriculture and diversified livestock systems. The zoning into strata has permitted better characterization of farm management activities, production systems, and the evaluation of farm outputs. The social environment has also been included and has been associated to the physical and economic features of the strata thus, characterizing areas for future development interventions.

The results have been organized and discussed following the same structure of the questionnaire used to collect the information. The indicators provided consist of sample estimates on basic aspects of farm management and socioeconomic aspects of farm-households. They mainly reflect variations across the country due to farm management and the effect of structural changes actually occurring in rural areas.

### **5.1. Land distribution and use**

A framework for land distribution and privatization in Albania was provided in the Law 7501 of July 19, 1992 and Law 7512 of August 10, 1992. The laws have established three land categories: agricultural land (including arable land, orchards, and vineyards); forest and pasture land, and nonagricultural land, such as urban areas, parks, roads, beaches and rocks. The laws have been designed principally to manage

the transition from cooperative farming to family farming, and provide no concrete indications of what new holders may or may not do with their land. According to a report<sup>1</sup> from the World Bank, the government's efforts to develop a legal framework for land reform has provided a clear indication of its commitments to support the structural changes based on legality and rule of law.

The process of land distribution and ownership reforms implemented by the government also reflects an interest and concern for improvement of rural and poor areas of the country. It has readily changed the strategy of operating many large state farms as coherent large-scale operations under either joint venture enterprises with foreign investors or under other financial management arrangements. The agricultural land, formerly under state farms and cooperatives, has been subdivided and restructured as small private farms. As a consequence, when the distribution is complete about 480,000 farming families will have received about 612,000 ha of agricultural land.

The land distribution has been without doubt an enormously complex, political, legal, and administrative process. However, the distribution of agricultural land has been proceeding relatively rapid in Albania. It can be considered that about 95 percent of the land has been privatized or has been given for use to farmers. The creation of an orderly land market will now depend on effective land registration systems, and appropriate development controls and monitoring systems.

Sample indicators of land tenure and distribution are presented in Table 3. There are variations in the tenure of land distributed among strata and districts: most of the farmers (92 percent) in districts located in stratum 1 are operating the land as owners. About 70 percent of the farmers in stratum 2 are land-owners and 28 percent operate the land as users. Eighty two percent of the farmers in stratum 3 are owners of the land and 59 out of 60 farmers (98 percent) in strata 4a and 4b

<sup>1</sup>An Agricultural Strategy for Albania. The International Bank for Reconstruction and Development/The World Bank, October 1992

are land-owners. Nationwide, about 85 percent of farmers are working the land as land-owners and 15 percent are land-users. The land users are the farmers working land still under state ownership.

An assessment of the size of the farms and their distribution across the country is presented in Table 3. The distribution is typically characterized by small holdings in which the average size of the farms ranges from 0.6 hectares in the mountainous areas of stratum 4a to a high of 1.87 hectares in stratum 1. The nationwide average of land per farmer is 1.25 hectares. The average nationwide farming experience of the farm households is 23 years. Farmers are operating the land in small and sparse parcels for which they have received a certificate of ownership or Tapi. Actually, 60 percent of the farm households possess this certificate (Table 4). Copies of the certificates are retained in district cadastral offices.

Results in Table 5 and 6 indicate the diversity, intensiveness, and dynamic use of land by farmers. The number of small parcels operated per farm household ranges from 1 up to 10 parcels with an average of about 3.3 parcels per farm. Farmers are using each parcel with at least one crop per year. The average parcel index of use is 1.4 which means that many parcels within the farms are cropped at least twice during the year.

The production growth and potential for increasing crop productivity will depend therefore on these emerging small-scale farmers who now represent a potential resource to stimulate. The government must act quickly to provide basic services and improve infrastructure that stimulate production and generate income in those private farms. Actually, those small and fragmented holdings are having serious problems of accessibility for farm machinery, crop and livestock management, and transport of inputs and outputs. Tables 7 to 9 include estimates of distances to parcels and markets and the transportation means by farmers in each stratum. The average distance from the household to parcels ranges from 5 m to about 9,000 m, and the distance from farm to markets ranges from 10 to 20 km. For most of the farmers the only means of transportation is animal transport. The situation tends to be more precarious to farmers living in the

mountainous areas where transportation means are scarce and roads are in bad conditions or nonexisting. The relative long distances among parcels and the diversity of cropping with a variation in the timing of management operations hamper the use of modern inputs and limit seriously the operation of irrigation systems.

The fragmentation of holdings of small isolated parcels and the allocation of resources on these parcels, the diversification of the farming systems and aspects associated with infrastructure for improving crop production efficiency, lack of working capital, and slow development of marketing systems and agricultural services tends to accelerate the development of subsistence farming in rural areas, principally in mountainous areas. This should concern policy makers as well as government and support institutions. It is expected, as expressed by donor institutions, that when opportunities outside the agricultural sector improve, part of the rural labor force would move out of agriculture. Provided the present legislation is amended, some of the farmers may then sell, lease or rent their property so that larger operational units would emerge. Creating an open market in transference through lease or sale will be important for increasing production efficiency and facilitate government and private sector services.

## 5.2 Human resources

The household presently constitutes the basic productive unit of the Albanian farming societies. The economic roles of household members in rural areas are typically complementary rather than competitive. Its members play complementary roles in household maintenance, cultivation, and other work. The household head lives permanently in the farm and is highly respected by the other members of the family; the household head usually takes major decisions with respect to the use of farm resources and household economics. The average age of the household head is 49 years (Table 10 to 12), with about 23 years of farming experience. About 90 percent of the households heads have at least one year of schooling to a maximum of sixteen years. The average schooling of the farm households' head

is eight years.

The total number of household members living from the resources of one farm ranges from a minimum of one to a maximum of fifteen, with an average of about six members per family including the household head; the number of adults is in average five to six; the number of children is in average two to three. Household heads work an average of 9 months of the year in the farm and derive their income from farming their own piece of land and herding or managing livestock. However, it is common to supplement the family income with off-farm employment and with remittances from relatives living abroad. About 25 percent of the households, in the rural areas surveyed, received extra income from off-farm activities.

Socio-cultural characteristics of the household members change little across the country. Tables 13 to 17 have been included to allow comparisons of some of these characteristics across different strata. Family labor contribution is substantial in all rural areas in contrast with non-family (exchanged and hired) labor contribution which is not important or noticeable in rural areas. The main differentiating characteristic among household families is the income they have from either farm and nonfarm activities. Nonfarm activities are generally services in the public and private sector. The most important source of off-farm income according to results in Table 18 come from pensions for service in the government, about 14 percent of the households in rural areas receive pensions which average about 950 L eks per month. Only 2.9 percent of household members in rural areas received repatriated income. This income is an average of 18000 L eks per month and ranged from 400 to 60000 L eks per month.

### **5.3 Household resources and farm assets**

Seasonal variations in levels of living and economic difficulties often occur within families in the rural areas. Albanians have the most difficult time to meet their family expenses during the months of January to April as shown in Table 19. The severity of this period is inversely related depending upon the cash and food available from the previous season and income derived from other farm sources, principally from livestock

activities. Families tend to overcome these difficulties by using money from remittances, consumption credit, and in very few cases by using cash credit from relatives, neighbors, and eventually, from the banking system. These traditional sources of credit reputedly often carry implicit or non-explicit interest rate, although this is to some extent a function of source and collateral.

The credit sources used by farmers, number of users, estimated amount of loans, and annual interest rates are presented in Table 20. It is observed from the survey that only 2 percent of farmers in the rural areas are using credit from the banking system. Farmers often obtain credit from relatives, neighbors, dealers, and the Rural Commercial Bank. The rates of annual interest vary from 26 to 30 percent when the loan is obtained from the bank. The rates of annual interest from relatives is about 10 percent, this explains the trend of farmers to use more often this form of credit. Farmers from the low land areas, principally those cropping and trading wheat, tend to use more often a formal type of credit. The reasons cited by farmers for not using credit are presented in Table 21. These are principally the high interest rates, the high risk involved in repayment the credit, and the low availability of credit during critical seasonal periods. Many farmers declared no need of credit. Those farmers generally finance their farming activities with money from remittances or money from relatives without interest. Farmers in general expressed very low knowledge and lack of confidence in the credit system operating in the country. The banking system activities in Albania are still under state sector control.

The financial sector will confront particular difficult challenges in the future. It is imperative that formal and informal credit should be available to farmers, traders, and entrepreneurs in rural areas to allow farmers access to inputs and markets. Also, cash credit can be used as an alternative source to overcome seasonal economic hardships. While seasonal credit should be the priority for the next few years, long-term credit will be required for a range of farm activities. These activities include credit for buying and repairing farm assets, buying tractors, upgrading irrigation systems, buying livestock, and initiating small-scale food processing enterprises.

Farmers in rural areas require minimum capital to produce and use it in association with the land, renting services, and labor available. In practice, long-term capital investment in Albania is wholly confined to housing and other buildings (Table 22). They are generally assets which are not readily tradeable nor do they contribute to any great extent to increase productive capacity.

Farm or capital assets owned by farming families, apart from livestock, actually consisted of dwelling houses, store and livestock sheds, and hand tools. Many of these assets are in bad condition or not operating and need immediate repair. Actually, farmers are using money from remittances to repair the dwellings, build new houses, and buy small tractors. A general description of the main assets in farms of the area surveyed and their value is presented in Table 22. Most of farmers have their own house and possess a livestock shed. Tractors are rare, and few farmers have a car or other transportation means. The value of these assets varies widely within each stratum.

Most farmers reported renting tractors, plows, disks, harrows, and seeders. This rental service is prevalent in many areas and is becoming very important during the beginning of the cropping season and during harvest time. It was noticeable to find farmers principally in low land areas who own or are willing to buy high power tractors and combine harvesters. They want to establish renting services; a few of them, are already generating capital and extra income by renting these assets. They are also contributing to solve bottlenecks in agricultural services, generally occurring during peak season activities. These services could be better rationalized by supporting private agri-input dealer services at favorable rental cost for farmers.

#### 5.4 Production systems

The production systems that are emerging in the country are being shaped mainly by factors such as (1) tradition, farmers used to work for state farms and cooperatives and became experienced in some crops or commodities, (2) demand, farmers as owners, deriving their income from the farm, are concentrating in food crops and products that satisfy primarily their own needs and have demand in local markets, (3) income, farming products that assure

income, and (4) resource availability, farming products that use family labor, are easy to transport and market, and can be store and processed in the farm. Other factors that are contributing in shaping the emerging farming systems are government interventions in liberalizing prices of agricultural products and the availability of seeds, irrigation and fertilizers.

The farming systems prevailing in rural areas are characterized by cropping systems composed of annual, perennial, and livestock systems which include major and small ruminants and poultry. The dominant crops are wheat, maize, alfalfa, vegetables, beans, and orchards. They are practiced across the country (Table 23) by about 59 percent of farmers in low land areas and by 45 to 50 percent of farmers in the mountainous areas. Livestock systems are dominated by cattle and poultry in the low land areas, and by sheep and goats in mountainous areas. Main outputs from annual and perennial crops include grain, seed, straw and fresh fodder for animal feeding, fruits, grapes, and olives (Table 24). Main outputs from livestock are meat, milk, and manure used as by-product for fertilization. Other products and by-products from livestock include eggs, fleeces and wool, honey, cheese, and butter.

Annual crop systems represent about 50 percent of the agricultural output value. It is dominated by wheat which occupies about 43 percent of the arable land and produces one third of the value of annual crops and about 17 percent of the total agricultural output. Perennial crop systems cover about 125,000 ha and contribute 6 percent to agricultural output. Orchards dominate with about 60,000 ha, mostly planted to temperate fruit, except for citrus in the extreme south. Olives and vineyards are also important with 50,000 ha and 20,000 ha, respectively. Livestock contributes 36 percent to the output of the agricultural sector. The national livestock herd comprises 600,000 cattle most of which are kept for milk (33 percent of livestock), the remainder being oxen and fattening stock, about 2.7 million sheep and goats, 180,000 pigs and 177,000 horses and mules kept for transport, as well as 5.6 million poultry.

Cropping and management of major crop systems

is characterized by two seasonal patterns, the winter crop season dominated by wheat and the summer season where maize, potatoes and some vegetables are dominant crops. Land preparation for winter wheat starts in September. Sowing takes place (Table 25) from the second half of October until the end of November, although heavy rains in October and November may delay planting until December. Harvesting of wheat occurs by the end of May, principally in many southern zones, and July in high altitude areas. Early, medium and late-maturing hybrids of maize are planted in April. The early types are ready for harvest in 120 days (mid-August) and the late and silage type are ready in 170 days (early October). Potatoes are generally planted in February-March and harvested in June-July. Vegetables, mainly grown for domestic consumption, are planted during the entire year. Beans also grown for domestic consumption are planted during March and April to be harvested during July. Alfalfa generally is seeded in February, but is also seeded in August-September in warmer areas when irrigation water is available. Once established in a field, alfalfa is kept for three years and harvested in average four times (cuts) during the year.

Wheat is grown in almost all Albanian districts. The mean area of parcels cultivated with wheat in the farms of the rural zones surveyed (Table 26) ranges from 0.25 ha (42 percent of the farm) in stratum 4a to 0.68 ha (36 percent of the farm) in low and plain land. Average wheat yields range from 19.6 quintals/ha under rainfed conditions in the mountain areas of stratum 4a to 29.4 quintals/ha in stratum 1. The average national wheat yield is estimated as 26.9 quintals/ha. Wheat straw is a by-product extensively used for bedding, and chopped as a supplementary livestock feed.

The nationwide average yield of maize was estimated as 24.1 quintals/ha (Table 27). Farmers average area for maize range from 0.16 ha in stratum 4a to 0.30 ha in stratum 1. The average yield of maize ranges from 15.1 quintals/ha in stratum 4b to 27.9 quintals/ha in stratum 1 in low land and coastal areas. Generally, maximum yields of up to 60 quintals/ha may be obtained in low land areas while in the mountains, where irrigation is a constraint, maximum yields are expected to vary from 30 to 40 quintals/ha.

Potatoes are important as a cash crop and an important product for local urban consumption principally in the inland plains of some districts such as Shkodra, Korce, and Kukes. The estimated average yield in the country is 90.5 quintals/ha (Table 28). The average area per farm by stratum occupied with potatoes range from 0.01 ha to 0.04 ha. This crop is generally grown as a garden crop. The average yields range from 65 quintals/ha in stratum 4b to 102 quintals/ha in stratum 2. Potatoes under optimum husbandry can yield over 300 quintals/ha.

Alfalfa average yields from the sample range from 157 quintals/ha in stratum 4b to 308 quintals/ha in stratum 1 (Table 29). The nationwide average yield was estimated as 281 quintals/ha. About 68% of area in alfalfa is in stratum 1. It accounts for about one-third of the fodder crops area. The area of farms used for alfalfa ranged from 0.02ha in strata 4a and b to 0.36 ha in stratum 1. Farmers in Albania are obtaining yields over 400 quintals/ha.

Farmers growing dry beans reported yields ranging from 7.4 quintals/ha (average in stratum 4a) to 10.2 quintals/ha in stratum 1 (Table 30). The sample estimate for the total average yield was 9.5 quintals/ha. Some farmers using fertilizers have obtained yields over 20 quintals/ha. This is considered very good production under the prevailing area conditions.

Livestock and animals are vital and often necessary parts of farm production systems in Albania, especially for range and small-scale systems. Most of the livestock activities involve cattle, sheep, goats, and equine (Table 31). Their main purposes are for breeding and farming operations such as animal traction or as draft animals for plowing and heavy work. The estimated average production of cow milk per farm in low land areas was about 1965 kg in one year (Table 32) or 1700kg per cow (Table 33). Milk from cows is the principal product in all areas except in high mountains where milk from goats exceeds that from cows. According to the results of the survey, about 68 percent of the milk from cows is produced in low land areas (strata 1 and 2). About 63 percent of milk production from sheep and

87 percent from goats comes from hilly and mountainous areas. The average production was estimated as 40 to 50 kg per head for sheep and 60 to 70 kg per head for goats during one year. Meat, another component of the dietary system in Albania is increasing in demand. About 70 percent of meat from cattle and 85 percent of meat from pigs are produced in areas within stratum 1 and stratum 2. Production of meat from sheep and goats occur principally in hilly areas (stratum 3). Poultry production for home and largely local consumption is spread through all rural areas.

Summary indicators of performance estimated from the survey data are presented in Table 33. Data on crop production were converted to grain units and data from livestock on livestock number and production capacity was converted to animal units. It is observed that farms in strata 1 and 2 have the highest grain unit. This reflects the actual situation in Albania where high intensive production of crops is occurring in low land and plain areas of strata 1 and 2. Farms in the coastal plains are expected to remain more productive given the larger size (1.9 ha average compared to about 0.60 ha in mountain areas), the soil fertility, water availability, and their easier access to input and output markets. Alternatively, mountainous farms have about equal value in animal units as farms in low lands although farming units are much smaller. This reflects the potential and comparative advantage of the mountain areas for livestock production. Those areas also have potential in forage production and pasture development for cow-milk and cattle meat production. The development of small ruminant production is also a good alternative for exploitation of large non-farm pasture resources in the mountains. Agricultural industries from milk, cheese and butter production offer good potential to create local markets. Goat and sheep meat production could be interesting markets for the supply of meat to larger cities located in low land areas. Wool, leather, and other by-products should be considered as other potential additional markets.

## 5.5 Farm economics

Inputs and outputs of the different farm activities are

recorded in quantities and these quantities are valued in monetary terms. The output prices, those received by the farm household at the farm gate or local market, and the prices for inputs, those paid by the farm-household, are presented in Table 34. Most of these prices were obtained from the survey; in some cases where farmer did not report prices, those were from secondary sources.

An attempt is made in this report to develop some basic indicators of the economic performance of farm management systems actually prevailing in the country. Results are expressed in terms of the gross and net value of production. The economic analyses performed and the indicators estimated are based on the following considerations:

1. The data were derived from a single visit interview relying primarily on farmer recall and as such estimates should be treated with caution. The estimates of economic performance shown in Tables 35 to 40 were obtained from a sample survey carried out in April 1994. The farming period covered inputs and outputs from farm activities during April 1993 to March 1994.

2. Outputs and costs are expressed on a net basis. This means that production used on the farm (e.g. animal feed and seed) is not shown in output; neither is it part of the costs.

The value of output consumed by the family, however (i.e. final demand) is shown as 'kind' and has been calculated using an imputed price based on the average of recorded sales for the same item. To establish this difference, records of crop and livestock production included 'destination' defined as: (a) household consumption, (b) sales to market (retail), (c) sales to processor, (d) use on farm as seed, (e) use on farm as animal feed, and (f) other. For the purpose of this analysis 'cash' sales comprise b and c and 'kind' is category a.

3. Family labor is not included in the calculation of costs. Farm profit or income therefore needs to cover living expenses as

well as a return to management and investment. Hired labor is shown as a cost. Farm output includes the value of production consumed in the house.

4. The tables do not include adjustments for the change in valuations over the period.

5. No depreciation calculation has been included in the calculations.

6. The fixed costs should be treated with caution as no distinction can be made between the domestic and farm components for items such as electricity and fuel. Farmer fixed costs were difficult to assess and in a number of cases they were not reported.

The household and his family in rural areas in Albania have limited choice of markets when selling and buying. Sales of both raw and processed products may be either to other local areas, to traders who live in the area, to local markets, or occasionally to distant urban markets, or public services. Purchases of farm inputs may be made from other local areas, dealers, or occasionally agricultural officers or public services, purchases of goods may be made from local or town markets. The pattern of trade is characterized by:

1. The smallness of quantities sold and bought.

2. The bulk and perishability of some commodities like fruit, and vegetables, fresh milk, and meat, which limit trade to local market in certain seasons, and encourage home processing.

3. The seasonality of production of some commodities, like wheat, maize, and potatoes and inputs like fertilizers, which contrast with the regularity of consumption, potentially resulting in wide seasonal price variations.

4. Uncertainty in production, leading to much intra- and inter- local area exchange.

5. Poor roads, inadequate transportation and seasonal rains, which potentially combine to raise marketing costs and discourage trade.

6. Prices of some commodities indirectly or directly affected by the government.

These factors together may result in a very complex pattern of prices and marketing prices, with many apparent anomalies.

Results of economic analysis for farming systems in stratum 1 are presented in Table 35. Farmers in stratum 1 have an average area of 1.87 ha. Farmers in this stratum grow and sell wheat, maize, potatoes, and vegetables (44 percent of total output). The remainder of income from selling comes from livestock principally from selling cow-milk and meat. About 55 percent of the total output value generates some cash flow, and 45 percent of the total output value is used or consumed at home. Fertilizers and contract machinery constitute the highest variable costs (60 percent). The gross margin of the main activities of the farm averaged 111,445 Leks per year. This amounts to a benefit: cost ratio of 2.62. The net income or reward to the farm-house-hold labor and management is 92,147 Leks per year.

The economic performance and resource use of farms in stratum 2 (Table 36) are similar to those obtained in stratum 1. In this stratum high costs are incurred principally in contract machinery and animal feeding (56 percent). Farmers in this stratum derived about 21 percent of their income from tree crops and 36 percent from annual crops. Fertilizers and contract machinery constitute the major input costs. The total gross margin is 85,430 Leks per year, this is 30 percent lower than the income received by farmers in stratum 1. The benefit: cost ratio is 3.24. The net income is 80,040 Leks per year. Farmers in stratum 2 tend to be more efficient than farms in stratum 1 in terms of value of outputs as compared with value of inputs.

Economic performance and resource use of farms in stratum 3 are presented in Table 37. Farmers in stratum 3 produce less wheat than those in stratum 1

and 2. However, the main output value comes from wheat, potatoes and cattle, sheep, and goat milk and meat production activities (60 percent). Costs for buying fertilizers, contracting machinery, and feeding animals amount to about 70 percent of total costs. Farmers in this stratum have an average gross margin of 73,911 Leks per year and a net income of 93,115 Leks per year. The benefit: cost ratio of the activities is 3.47 which is about the same as farms in stratum 2.

Livestock production is the principal activity for sustaining families in strata 4a and 4b. Farmers in those strata have serious constraints that are hampering their economics. Main constraints in production are due to scarcity of arable land, the low fertility of the soils, lack of money, and infrastructure to perform efficiently. The economic system of subsistence is noticeable in those areas where farmers consume what they produce and generate very low cash income for further investments, buying inputs, or make improvements. The average area of the farms in stratum 4a (Table 38) is 0.60 ha and wheat, maize, and vegetables are produced in addition to livestock activities, which is the main farm activity. The average area in stratum 4b (Table 39) is 0.55 ha of which about 0.30 ha are dedicated to crop maize, potatoes, and vegetables. The main source of income in farms of this strata is livestock. Farms in strata 4a and 4b have gross margins of 59,697 and 53,769 Leks per year, respectively. The net income per farmer is 58,484 and 52,052 Leks per year for stratum 4a and 4b, respectively. The benefit cost ratio is 3.79 for stratum 4a and 4.41 for stratum 4b due mainly to activities in livestock. Farmers in those areas use low inputs. Most of the costs are incurred in buying small amounts of fertilizer and animal feed.

Summary results of economic performance of the farms and farming systems practiced in the five strata across the country are presented in Table 40. These indicators serve to evaluate the performance of farms during the cropping season covered by the survey. Farms in stratum 1 have more area in annual crops, higher output value, and have more productive livestock in terms of animal units. Wheat, vegetables, fruits are the main source of cash in farms located on low land areas in stratum 1 and 2. Potatoes, maize, and vegetables are the principal source of cash in the mountains. Livestock output per farm is also higher

in farms located on low and plain areas than those located on the mountains. Milk accounts for 40 to 53 percent of the value of the livestock product and meat for 30 to 40 percent. Farms on low land areas operate at much higher variable costs than farms in the mountains. Farmers are using more expensive inputs (i.e. fertilizer, seed, animal feed) and pay more rent for machinery for plowing and harvesting. Analysis of the performance of the farms in terms of the total gross margins shows better performance of farmers in strata located on low land areas. Generally, gross margins per farm for annual crops and livestock and total farm gross margins decrease noticeable in mountain areas. Total net income per farm is also higher in farms on strata on low lands areas. Benefit cost ratios per farm tend to be higher in farms on the mountains. This reflects the potential value of low-cost improvements and small infrastructure and investments in those areas.

Indicators of economic performance per farm have also been expressed in terms of value per hectare. These indicators will be useful to compare efficiency and potential improvements of farming systems and activities of farms within the same strata. They will be useful to evaluate output values from changes in inputs or components in a selected farming system. A general observation of these indicators across the strata tend to show higher values in gross margins of livestock per unit area in mountainous areas than in low land areas. This indicates, in a general way, the potential value and comparative advantage of promoting and implementing management techniques on animal-crop systems for sustaining families living in mountainous areas.

## 5.6 Constraints in crop production

As in many other countries, growth of farm productivity in Albania and incomes depend on yield-increasing and production innovations, together with complementary investments and infrastructure. Results of the survey in Table 41 shows that there are physical factors constraining farm productivity. These are characterized as follows:

1. Poor infrastructure characterized by lack of irrigation; most of the irrigation systems are

damaged and there are only partially functioning irrigation systems.

2. Low investment characterized by low mechanization, coupled with unfavorable conditions for renting machinery and animal traction.

3. Low investment and low use of agricultural innovations; there is not adequate use of mineral fertilizers principally in mountainous areas. The low use of this key input is increasing deterioration of soil fertility.

4. Lack of seeds, adequate varieties, and animal feed resources.

There were other factors mentioned by farmers constraining production and need immediate attention from policy and decisionmakers. They are mainly the uncertainty in the evolution of prices and production costs and lack of information on these items, and the nonexisting local markets and processing enterprises for milk, fruits and wool. Other important concerns of farmers and government officers were limitations of farmers' economic and social conditions (barriers for obtaining credit and creating Private Farmers Associations), small size of farms,

poor land quality rendering to structural poverty, and lack of extension-related services for technology transference.

## 5.7 Fertilizer use

According to results of economic performance of farming systems in Albania in Tables 35 to 39, fertilizer use accounts for 14.2 percent to 28.2 percent of the total variable costs incurred by farmers. Also, fertilizer is mentioned by farmers as a major input constraint in crop production in the country.

Crop areas receiving mineral fertilizers by stratum are presented in Table 42. The total area fertilized with mineral fertilizers is 184,190 ha, this is about 32 percent of the total arable land. Wheat (47.8 percent), maize (27.1 percent), and alfalfa (11.9 percent) account for 86.8 percent of the total area

fertilized with mineral fertilizer. Sixty seven percent of the total area fertilized with mineral fertilizers is in strata 1 and 2, twenty nine percent is in stratum 3 and only 4 percent is in farms located in mountainous areas.

Crop areas and mean application rates of fertilizer in each stratum is presented in Tables 42 to 47. Some observations from these tables are as follows:

1. Most farmers in low land areas tend to supplement mineral fertilization with animal manure. Farmers in mountainous area strata use animal manure as the main source of nutrients.

2. The basic nutrients applied are nitrogen and phosphorus. Farmers are applying these two nutrients by combining different fertilizer products. Urea, ammonium nitrate (AN), and diammonium phosphate (DAP) are the principal sources of nitrogen. Single superphosphate (SSP) and DAP are the sources of phosphorus. Potassium apparently is not considered a limitation to crop production.

3. The main source of nitrogen is urea. This product is produced in the country but was also imported in 1994. The main source of phosphorus is SSP which is produced in the country using imported phosphate rock.

4. The rates of nutrients applied vary slightly according to the crop and area but in general farmers tend to apply the same rate across the country.

5. Urea is the main fertilizer used. It is used in about 36 percent of the area fertilized in wheat and about 16 percent of the area fertilized in maize. Ammonium nitrate is used in about 15 percent of the wheat and 5 percent of maize.

Summary results of the survey on fertilizer use are presented in Table 48. The total amount of fertilizer used was 46,239 mt of which 22,082 mt (48 percent) was urea and 24,157 mt (52 percent) of AN, SSP, and DAP. The total area fertilized was 109,207 ha. This is equivalent to about 20 percent of the total

arable land in the country. If the goal were to fertilize at most 80 percent of the total arable land in the country, using the actual fertilizer rates, the country would require at least 66,000 additional metric tons of urea and a total of 72,000 mt of AN, SSP, and DAP to satisfy the required demand. The total amount of fertilizer required to achieve this goal would be 185,000 mt of fertilizers.

Most nitrogen fertilizers required in the country were imported in 1994. The ability of Albania to produce nitrogen fertilizer to supply the potential increasing demand is entirely dependent upon obtaining adequate supplies of natural gas. The ratio between production and apparent demand is about 0.21 which is lower than in many developing countries. There are also many constraints to fertilizer use in the country. Results in Table 49 show that main constraints are economics due to high prices (34 percent) lack of cash or credit (30 percent) and high price of transportation (3 percent).

The Government of Albania should immediately rationalize its policies influencing fertilizer supply, given its commitments on food security and agricultural sector reform and development. Priority considerations should be given to eliminating taxes on imported fertilizer and other agri-inputs and to obtaining an adequate supply of natural gas and directing it into fertilizer production. Improvement of the fertilizer sector in Albania will take place in an environment characterized by the following:

1. Geographically dispersed fertilizer users composed of many small farmers generally lacking the level of knowledge, skills, and equipment to use fertilizer efficiently and requiring both technical and financial assistance.
2. Lack of adequate domestic fertilizer supply capability due to low natural gas supply and thus the need for improving supply of this feedstock, and facilitating fertilizer import, without taxes to permit availability to farmers at reasonable prices through the recently established private marketing system.
3. Absence of information and fertilizer-

related agronomic data base, which will create the need for more fertilizer use research activities.

4. Inadequate national agricultural extension programs and thus the need for expanding agri-input dealers knowledge on input use and desire to disseminate information.
5. Lack of complementary farm inputs such as fertilizer-responsive varieties, plant protection chemicals, irrigation, and modern farm implements.
6. Relatively by low but growing levels of fertilizer use and thus the need for increasing expenditures in fertilizer in the years ahead.

## 6 Institutional services

Evaluation of institutional services in the context of this report is rather limited. It deals with the different ways public and private sectors are promoting the use of adequate farming techniques and informing on ways to properly manage agricultural and economic resources for investment and development. Specific questions were asked to farmers with respect to the type of agricultural information they receive and the source of information. The results of this survey are presented in Table 50. Most farmers are receiving general information. This information is related to program investments in the agricultural sector and regional activities of government officers promoting the agricultural situation. Few farmers declared receiving information on technical aspects addressing their actual problems. This information is related to crop management, principally date of planting, plant protection, and fertilizer use. Very few farmers received information on business management, marketing, prices, and livestock activities. The main information sources are radio and television. Very few received pamphlets or bulletins. There is not an interchange of experiences among farmers, not contact with private farmers organizations, and very poor or no use of extension services.

There is a need to look for effective ways of making useful, relevant information available to rural people. At the same time, there is a growing recognition of

the need to support Albanian farmers, private farmers organizations, and extension workers in the field, both by contributing to the general information environment in which they work (farming, trading, business) and, more directly, by providing them with the support materials, and updating their own technical expertise and knowledge.

Table 1. Macroeconomic and agricultural indicators targets 1981 - 96

Indicators and Targets	1981	1986	1991	1993	1996
<b>Macroeconomic</b>					
Real GDP Growth (%)			-13.1	11.0	6.0
Per Capita National Income (US \$)			10.0	32.4	54.0
Inflation Rate (average)			225.9	24.5	10.6
Average Exchange Rate (lek/US \$1)			75.1	102.8	134.3
GDP/Net Material Product (NMP)			1.3	1.4	1.4
<b>Share of GDP (%) (Based on current prices)</b>					
			39.3	55.8	56.8
Agriculture			36.5	13.8	11.8
Industry			24.2	30.4	31.4
Services					
<b>Share of employment (%)</b>					
Agriculture	49.8	49.7	47.3	56.3	57.5
Industry	21.2	21.6	18.3	8.8	7.2
Services	28.6	28.7	29.4	34.9	35.3
<b>Land use</b>					
	<b>000 ha</b>	<b>Change (1981=100)</b>			
Arable & permanent crops	706	101.0	99.2	99.8	101.0
Cereals	343	90.6	92.1	95.3	98.1
Roots & tubers	16	81.2	56.3	56.3	57.0
Pulses	51	61.5	47.1	49.0	51.2
Sunflower seed	26	80.5	76.9	76.9	70.0
Permanent crops	118	105.1	105.9	105.9	106.0
Permanent pastures	410	97.1	98.3	104.8	105.0
Irrigated land	378	106.9	111.9	-	-
Forest & woodland	1020	102.3	102.5	102.3	103.0
<b>Crop productivity</b>					
	<b>(kg/ha)</b>	<b>Change (1981=100)</b>			
Cereals	2500	111.8	88.8	111.3	114.0
Roots & tubers	6967	105.3	103.7	95.7	97.3
Pulses	493	116.4	116.4	113.6	115.0
Sunflower seed	1214	100.5	56.4	56.4	56.0

Original sources: The Food and Agricultural Organization of the United Nations, Agricultural Yearbook, 1992  
World Bank, An Agricultural Strategy for Albania  
International Monetary fund (IMF), Tirana

Table 2. Distribution of agricultural land in the survey areas

Characteristic	Agricultural Land (has)				Pasture	
	Arable Land (has)	Tree Crops (has)	Total (has)	%	Total (has)	%
<b>1</b> Coastal, low and level land with intensive agriculture	237297	26058	263355	39.8	13758	<b>3.2</b>
<b>2</b> River valleys and foothills with intensive agriculture	121336	55998	177334	26.8	94827	<b>22.1</b>
<b>3</b> Upland hills with diversified agriculture	151258	19742	171000	25.8	103655	<b>24.1</b>
<b>4a</b> Low mountain areas with limited agriculture	26733	14546	41279	6.2	44927	<b>10.5</b>
<b>4b</b> High mountain areas with little or no agriculture	7165	2111	9276	1.4	172749	<b>40.2</b>
<b>Total</b>	<b>543789</b>	<b>118455</b>	<b>662244</b>	<b>100.0</b>	<b>429917</b>	<b>100.0</b>

Source: Henao Julio, 1993. Summary Report. Area Sampling Frame and Crop Yield Surveys in Albania, 1993. IFDC

Table 3 Sample characteristics of the survey areas

Strata	District	Number of Households	Mean Farm Area (ha)	Household Farming Experience (Years)	Land (Numbers)	
					Owners	Users
1	DURRES	24	1.14	26	24	0
	FIER	73	2.59	27	73	0
		4	1.61	15	0	4
	GJIROKASTER	5	2.14	14	5	0
		5	1.75	14	0	5
	KAVAJE	16	1.68	31	16	0
	KORCE	14	1.18	18	14	0
	KRUJE	10	1.94	21	10	0
	LAC	10	1.54	22	10	0
	LEZHE	10	1.94	23	10	0
		2	2.95	31	0	2
	SHKODER	12	1.42	28	12	0
	TIRANE	8	1.03	12	8	0
		8	0.55	19	0	8
	VLORE	4	1.48	19	4	0
	<b>Stratum</b>		<b>205</b>	<b>1.87</b>	<b>24</b>	<b>186</b>
2	BERAT	3	0.70	25	3	0
		25	0.50	28	0	25
	ELBASAN	28	1.69	20	28	0
	FIER	28	1.61	10	0	28
	KAVAJE	3	0.78	27	3	0
	KUCOVE	19	1.26	22	19	0
	MALESI E MADHE	3	2.50	39	3	0
		3	3.59	24	0	3
	SARANDE	10	1.50	34	10	0
	SHKODER	21	0.45	27	21	0
	TIRANE	19	0.84	25	19	0
	VLORE	19	1.14	15	19	0
	<b>Stratum</b>		<b>181</b>	<b>1.18</b>	<b>22</b>	<b>125</b>
3	DIBRA	12	1.20	30	12	0
	ELBASAN	12	0.65	22	12	0
	KRUJE	14	0.53	27	14	0
		1	1.00	35	0	1
	KUKES	13	0.50	20	0	13
	LIBRAZHD	13	0.64	14	13	0
	MAT	1	1.50	22	1	0
		18	0.79	14	0	18
	PERMET	15	1.76	25	15	0
	PUKE	17	0.34	27	17	0
	SHKODER	14	0.09	19	14	0
	SKRAPAR	22	1.45	25	22	0
	TEPELENE	26	1.53	25	26	0
	VLORE	4	1.32	24	4	0
	<b>Stratum</b>		<b>182</b>	<b>0.93</b>	<b>23</b>	<b>150</b>
4a	KORCE	7	1.06	22	7	0
	KUKES	17	0.50	39	17	0
		1	0.13	25	0	1
	MAT	13	0.19	9	13	0
	MIRDITE	5	0.18	15	5	0
	TEPELENE	12	1.14	23	12	0
<b>Stratum</b>		<b>55</b>	<b>0.60</b>	<b>24</b>	<b>54</b>	<b>1</b>
4b	LIBRAZHD	9	0.74	10	9	0
	PUKE	7	0.28	21	7	0
	VLORE	9	0.57	39	9	0
<b>Stratum</b>		<b>25</b>	<b>0.55</b>	<b>23</b>	<b>25</b>	<b>0</b>
<b>Sample</b>		<b>648</b>	<b>1.25</b>	<b>23</b>	<b>540</b>	<b>108</b>

\* Owners: Land in former cooperatives transferred as private property

\* Users: The land is state property

Table 4. Percent of parcels with land user certificate

Description	Tapr Certificate			Number of Parcels
	No Response	Yes	No	

**Stratum**

Stratum 1	0.2	42.1	57.8	682
Stratum 2	0.8	55.6	43.6	603
Stratum 3	0.2	65.9	33.9	587
Stratum 4a	0.2	89.5	10.3	214
Stratum 4b	0.0	100.0	0.0	16
<b>Total</b>	<b>0.3</b>	<b>59.3</b>	<b>40.4</b>	<b>2102</b>

**Districts**

Berat	5.8	0.0	94.2	62
Dibra	0.0	0.0	100.0	42
Durrës	0.0	11.9	88.1	94
Elbasan	0.0	100.0	0.0	132
Fier	0.3	25.0	74.7	352
Gjirokaster	0.0	70.4	29.6	87
Kavajë	0.0	100.0	0.0	73
Korçë	0.0	95.1	4.9	102
Krujë	0.0	25.8	74.2	62
Kuqovë	0.0	100.0	0.0	92
Kukës	0.0	0.0	100.0	32
Lezhë	0.0	0.0	100.0	27
Librazhd	0.0	100.0	0.0	83
Malesi e madhe	0.0	0.0	100.0	19
Mat	1.0	36.3	62.7	114
Mirditë	0.0	100.0	0.0	17
Permet	0.0	75.3	24.7	81
Pukë	0.0	0.0	100.0	77
Skopar	0.0	100.0	0.0	85
Shkodër	0.9	41.2	57.9	114
Tepelenë	0.0	83.2	16.8	127
Tiranë	1.3	92.7	6.0	98
Vlorë	0.0	79.8	20.2	130
<b>Total</b>	<b>0.3</b>	<b>59.3</b>	<b>40.4</b>	<b>2102</b>

\* Sample size: 648 farm households

Table 5. Number of parcels per farm and parcel use indicators

Description	Farm Area (has)	Number of Parcels			Parcel Use	
		Min	Max	Mean	Cropped (number)	Index

**Stratum**

1	1.87	1	7	3.1	5.5	1.8
2	1.18	1	8	3.3	4.6	1.4
3	0.93	1	10	3.3	4.0	1.2
4a	0.60	1	9	3.9	5.3	1.4
4b	0.55	1	5	2.6	2.6	1.0

**District**

Berat	0.52	1	4	1.9	4.7	2.5
Dibra	1.20	1	10	3.5	4.8	1.4
Durrës	1.14	2	5	3.5	6.2	1.8
Elbasan	1.38	1	6	3.3	4.9	1.5
Fier	2.30	1	6	3.3	6.8	2.1
Gjirokaster	1.94	1	4	2.7	1.9	0.7
Kavajë	1.54	2	6	3.8	4.8	1.3
Korçë	1.14	4	7	5.1	7.1	1.4
Krujë	1.11	1	4	2.5	3.8	1.5
Kuçovë	1.26	2	6	4.8	5.3	1.1
Kukës	0.40	1	9	4.2	4.7	1.1
Lac	1.54	2	4	3.2	3.7	1.2
Lezhë	2.11	1	5	2.7	5.2	1.9
Librazhd	0.68	1	5	2.9	4.2	1.4
Malesi e madhe	3.05	1	7	3.2	4.2	1.3
Mat	0.57	2	7	3.3	3.1	0.9
Mirditë	0.18	2	5	3.4	4.0	1.2
Permet	1.76	4	8	5.9	7.9	1.3
Pukë	0.32	1	4	2.2	2.9	1.3
Sarandë	1.50	6	8	7.7	2.6	0.3
Skrapar	1.45	2	7	3.9	5.2	1.3
Shkodër	0.59	1	5	2.4	3.8	1.6
Tepelenë	1.41	1	6	3.0	3.4	1.1
Tiranë	0.82	1	7	2.2	3.7	1.7
Vlorë	1.06	1	5	2.5	2.0	0.8
<b>Sample</b>	<b>1.25</b>	<b>1</b>	<b>10</b>	<b>3.3</b>	<b>4.7</b>	<b>1.4</b>

Table 6 Maximum number of parcels used by farmers in crop production activities

Crop Activity	Stratum 1		Stratum 2		Stratum 3		Stratum 4a		Stratum 4b	
	Parcels	%	Parcels	%	Parcels	%	Parcels	%	Parcels	%
Wheat	5	25.1	5	30.4	5	24.3	6	12.8	-	-
Maize	3	17.0	3	21.8	5	26.6	4	26.8	3	48.8
Barley	3	1.4	1	0.2	-	-	3	0.6	1	2.3
Oats	1	0.5	2	4.7	2	4.3	3	9.8	-	-
Rye	-	-	-	-	2	1.7	4	7.9	1	4.7
Patate	2	2.4	2	3.3	1	8.7	2	13.4	1	11.6
Dry Beans	2	12.5	2	4.9	1	3.7	2	4.3	1	7.0
Sugarbeets	1	0.5	-	-	-	-	-	-	-	-
Sunflower	1	0.3	-	-	-	-	-	-	-	-
Tobacco	1	0.1	2	8.2	1	0.4	-	-	-	-
Vegetables	3	18.5	2	15.8	2	20.0	2	17.7	1	23.3
Alfalfa	3	19.8	2	7.6	2	6.8	2	6.1	1	2.3
Green Forages	3	1.9	2	3.1	2	3.5	1	0.6	-	-
		100.0		100.0		100.0		100.0		100.0
Number of farmers		205		181		182		55		25
Mean Area (has)		1.87		1.18		0.93		0.60		0.55

Table 7. Average number of parcels per farm and estimated distance from household to parcels

Description	Average Farm Area (has)	Average Number of Parcels	Distance from Household to Parcels (m)		
			Mean	Min	Max

**Stratum**

<b>1</b>	1.87	3	1658	5	9125
<b>2</b>	1.18	3	1342	5	7000
<b>3</b>	0.93	3	1301	10	6000
<b>4a</b>	0.60	4	873	25	5000
<b>4b</b>	0.55	3	2024	10	8330

**District**

Berat	0.52	2	2053	200	7000
Dibra	1.20	4	1919	567	5200
Durrës	1.14	4	2746	251	5183
Elbasan	1.38	3	847	30	2950
Fier	2.30	3	1749	217	9125
Gjrokaster	1.94	3	3644	1075	7500
Kavaje	1.54	4	1700	650	4200
Korçë	1.14	5	1165	350	4200
Krujë	1.11	2	728	10	4000
Kuçovë	1.26	5	1072	440	1835
Kukës	0.40	4	854	333	2434
Lac	1.54	3	74	34	150
Lezhë	2.11	3	723	150	1000
Librazhd	0.68	3	878	10	2253
Malesi e madhe	3.05	3	375	5	836
Mat	0.57	3	643	125	2000
Mirditë	0.18	3	30	25	63
Permet	1.76	6	1764	300	2357
Pukë	0.32	2	186	30	475
Sarandë	1.50	8	1234	1000	1494
Skrapar	1.45	4	1174	667	1833
Shkodër	0.59	2	822	10	5005
Tepelenë	1.41	3	2951	270	6000
Tiranë	0.82	2	1136	5	3250
Vlorë	1.06	2	1385	150	8330
<b>Sample</b>	<b>1.25</b>	<b>3</b>	<b>1416</b>	<b>5</b>	<b>9125</b>

Table 8. Estimated distances from farms to markets and stores for buying and selling products

Description	Farm Area (has)	Number of Parcels	Distance in kilometers to the nearest			
			Market for Selling Products	Market to buy Agr-Inputs	Dealer to buy Fertilizer	Store to buy Household Items

**Stratum**

1	1.87	3	12	11	9	5
2	1.18	3	10	10	7	4
3	0.93	3	13	13	13	9
4a	0.60	4	20	21	21	17
4b	0.55	3	15	15	17	3

**District**

Berat	0.52	2	7	7	6	6
Dibra	1.20	4	7	7	7	7
Durres	1.14	4	6	4	3	5
Elbasan	1.38	3	6	4	2	1
Fier	2.30	3	14	14	14	4
Gjrokaster	1.94	3	11	17	7	2
Kavaje	1.54	4	4	5	3	4
Korce	1.14	5	16	10	9	12
Kruje	1.11	2	6	6	6	6
Kucove	1.26	5	3	10	2	1
Kukes	0.40	4	33	33	33	19
Lac	1.54	3	5	5	5	5
Lezhe	2.11	3	21	14	11	9
Librazhd	0.68	3	18	21	25	15
Malesi e madhe	3.05	3	24	24	9	3
Mat	0.57	3	9	9	9	10
Mirdite	0.18	3	15	60	60	1
Permet	1.76	6	6	6	6	6
Puke	0.32	2	10	12	12	4
Sarande	1.50	8	60	60	57	13
Skrapar	1.45	4	20	20	20	20
Shkoder	0.59	2	11	8	7	8
Tepelene	1.41	3	10	9	10	6
Tirane	0.82	2	16	6	5	4
Vlore	1.06	2	9	12	5	1
<b>Sample</b>	<b>1.25</b>	<b>3</b>	<b>13</b>	<b>12</b>	<b>11</b>	<b>7</b>

Table 9 Transportation means used by farmers

Stratum	Means of Transportation	Number of Farmers	%
<b>Stratum 1</b>	Truck	17	8.3
	Car	25	12.1
	Animal & cart	9	4.4
	Hand cart	4	1.9
	On foot	1	0.5
	Animal	20	9.7
	No transport	123	59.7
	Tractor	8	1.5
	No response	4	1.9
	<b>Total</b>	<b>211</b>	<b>100.0</b>
<b>Stratum 2</b>	Truck	5	2.8
	Car	5	2.8
	Animal & cart	11	6.1
	Hand cart	4	2.2
	On foot	2	1.1
	Animal	73	40.3
	No transport	74	41.0
	Tractor	3	1.1
	No response	5	2.7
	<b>Total</b>	<b>182</b>	<b>100.0</b>
<b>Stratum 3</b>	Truck	1	0.6
	Car	2	1.1
	Animal	119	65.4
	No transport	54	29.7
	No response	6	3.3
	<b>Total</b>	<b>182</b>	<b>100.0</b>
<b>Stratum 4a</b>	Animal	31	57.4
	No transport	23	42.6
	<b>Total</b>	<b>54</b>	<b>100.0</b>
<b>Stratum 4b</b>	Animal	9	36.0
	No transport	16	64.0
	<b>Total</b>	<b>25</b>	<b>100.0</b>

Table 10. Estimates on household composition, schooling , and employment

Characteristic	%	Min.	Max.	Mean	STD
<b>Number of household members</b>	--	1	15	5.6	2
<b>Household head</b>					
Age (years)		18	90	49	13
Schooling (years)	90.0	1	16	8	3
On farm employment:					
Months	78.0	1	12	9	3
Off farm income:					
Months	45.0	1	12	10	2
Income (leks/month)		200	30000	2900	4000
<b>Number of adult household members</b>		1	12	3.5	1.6
Age (years)		18	101	39	17
Schooling (years)	91.0	1	16	8	3
On farm employment:					
Months	73.0	1	12	8	4
Off farm income					
Months	25.0	1	12	11	1
Income (leks/month)		120	60000	4200	8000
<b>Number of child household members</b>		1	7	2.6	1.4
Age (years)		1	17	9	5
Schooling (years)	85.0	1	12	5	3
On farm employment:					
Months	14.0	1	12	6	4
Off farm income					
Months	0.2	12	12	12	0
Income (leks/month)		300	2000	1300	900

STD: Standard Deviation of the sample

% : Percent of members in the sample

Adult : Member > 18 years

Child : Member < 18 years

Note : The mean farm area of the sample survey is 1.25 hectares

: The adult household members include the household head

Table 11. Male household composition, schooling, and employment

Characteristic	%	Min.	Max.	Mean	STD
<b>Household head</b>	97.0				
Age (years)		18	90	50	14
Schooling (years)		1	16	8	3
On farm employment:					
Months		1	12	9	3
Off farm income:					
Months		1	12	11	1
Income (leks/month)		200	30000	2900	4000
<b>Number of adult household members</b>		1	6	1.8	1
Age (years)		18	90	39	17
Schooling (years)		1	16	9	3
On farm employment:					
Months		1	12	9	3
Off farm income:					
Months		1	12	11	1
Income (leks/month)		200	60000	5000	10000
<b>Number of child household members</b>		1	5	1.7	1
Age (years)		1	17	9	5
Schooling (years)		1	12	6	3
On farm employment:					
Months		1	12	6	5
Off farm income:					
Months		12	12	12	0
Income (leks/month)		1800	2000	1900	100

STD: Standard Deviation of the sample

% : Percent of members in the sample

Adult : Member > 18 years

Child : Member < 18 years

Table 12. Female household composition, schooling, and employment

Characteristic	%	Min	Max	Mean	STD
<b>Household head</b>	<b>3.0</b>				
Age (years)		37	76	56	11
Schooling (years)		4	12	7	3
On farm employment:					
Months		0	12	9	3
Off farm income:					
Months		12	12	12	
Income (leks/month)		200	7000	1600	2200
<b>Number of adult household members</b>		<b>1</b>	<b>7</b>	<b>1.7</b>	<b>0.9</b>
Age (years)		18	101	39	17
Schooling (years)		2	16	8	3
On farm employment:					
Months		1	12	10	2
Off farm income:					
Months		2	12	11	1
Income (leks/month)		120	20000	1300	2000
<b>Number of child household members</b>		<b>1</b>	<b>6</b>	<b>1.7</b>	<b>1</b>
Age (years)		1	17	9	5
Schooling (years)		1	12	5	3
On farm employment:					
Months		1	12	6	5
Off farm income:					
Months		12	12	12	
Income (leks/month)		330	330	330	

STD: Standard Deviation of the sample

% : Percent of members in the sample

Adult : Member > 18 years

Child : Member < 18 years

Table 13. Estimates of household composition, schooling, and employment in Stratum 1

Characteristic	%	Min.	Max	Mean	STD
<b>Number of household members</b>		1	15	5.4	2.1
<b>Household head</b>					
Age (years)		21	90	49	13
Schooling (years)	92.0	1	16	8	4
On farm employment:					
Months	81.0	1	12	8	4
Off farm income :					
Months	48.0	1	12	10	2
Income (leks/month)		230	27650	3000	4000
<b>Number of adult household members</b>		1	12	3.5	1.7
Age (years)		18	96	39	16
Schooling (years)	93.0	1	16	9	3
On farm employment:					
Months	75.0	1	12	9	3
Off farm income :					
Months	27.0	1	12	10	2
Income (leks/month)		200	60000	5200	11000
<b>Number of child household members</b>		0	6	2.3	1
Age (years)		1	17	9	5
Schooling (years)	51.0	1	12	5	3
On farm employment:					
Months	12.0	1	12	2	4
Off farm income :					
Months	0.5	12	12	12	0
Income (leks/month)		330	1800	1000	1000

STD : Standard Deviation of the stratum

% : Percent of members in the stratum

Adult : Member > 18 years

Child : Member < 18 years

Table 14. Estimates of household composition, schooling, and employment in Stratum 2

Characteristic	%	Min.	Max.	Mean	STD
<b>Number of household members</b>		1	13	5.5	2.1
<b>Household head</b>					
Age (years)		18	84	48	14
Schooling (years)	95.0	1	16	8	3
On farm employment:					
Months	82.0	1	12	9	3
Off farm income :					
Months	40.0	6	12	11	2
Income (leks/month)		300	30000	4000	6000
<b>Number of adult household members</b>		1	10	3.4	1.6
Age (years)		18	95	38	17
Schooling (years)	92.0	1	16	8	3
On farm employment:					
Months	73.0	1	12	9	3
Off farm income :					
Months	21.0	6	12	11	2
Income (leks/month)		300	40000	4500	7700
<b>Number of child household members</b>		0	7	2.4	1.3
Age (years)		1	17	9	5
Schooling (years)	68.0	1	12	6	3
On farm employment:					
Months	19.0	1	12	6	5

STD : Standard Deviation of the stratum

% : Percent of members in the stratum

Adult : Member > 18 years

Child : Member < 18 years

Table 15. Estimates of household composition, schooling, and employment in Stratum 2

Characteristic	%	Min	Max	Mean	STD
<b>Number of household members</b>		2	12	5.8	2.1
<b>Household head</b>					
Age (years)		16	84	51	13
Schooling (years)	39.0	1	16	7	3
On farm employment:					
Months	75.0	1	12	9	3
Off farm income :					
Months	41.0	1	12	10	2
Income (leks/month)		200	15000	2000	2000
<b>Number of adult household members</b>		2	8	3.5	1.4
Age (years)		18	95	39	17
Schooling (years)	89.0	1	16	8	3
On farm employment:					
Months	70.0	1	12	10	2
Off farm income :					
Months	23.0	1	12	10	2
Income (leks/month)		120	40000	3300	7000
<b>Number of child household members</b>		1	7	2.7	1.6
Age (years)		1	17	10	5
Schooling (years)	70.0	1	12	5	3
On farm employment:					
Months	10.0	2	12	8	4

STD : Standard Deviation of the stratum

% : Percent of members in the stratum

Adult : Member > 18 years

Child : Member < 18 years

**Table 16. Estimates of household composition, schooling, and employment in Stratum 4a**

Characteristic	%	Min	Max	Mean	STD
<b>Number of household members</b>		1	11	5.5	2.4
<b>Household head</b>					
Age (years)		25	89	55	16
Schooling (years)	79.0	1	16	7	3
On farm employment:					
Months	66.0	2	12	8	3
Off farm income :					
Months	70.0	4	12	11	2
Income (leks/month)		200	20000	2700	3300
<b>Number of adult household members</b>		1	6	3.2	1.1
Age (years)		18	89	43	18
Schooling (years)	87.0	1	16	8	3
On farm employment:					
Months	76.0	1	12	8	4
Off farm income :					
Months	36.0	3	12	11	1
Income (leks/month)		200	30000	3000	4600
<b>Number of child household members</b>		1	7	3.5	1.7
Age (years)		1	17	9	5
Schooling (years)	62.0	1	11	5	3
On farm employment:					
Months	18.0	1	12	4	3

STD : Standard Deviation of the stratum

% : Percent of members in the stratum

Adult : Member > 18 years

Child : Member < 18 years

Table 17. Estimates of household composition, schooling, and employment in Stratum 4b

Characteristic	%	Min	Max	Mean	STD
<b>Number of household members</b>		2	14	6.4	3
<b>Household head</b>					
Age (years)		19	74	46	13
Schooling (years)	38.0	1	12	6	3
On farm employment					
Months	80.0	2	12	9	3
Off farm income					
Months	36.0	5	12	11	1
Income (leks/month)		520	6000	1800	1800
<b>Number of adult household members</b>		1	8	4	2.2
Age (years)		18	101	37	17
Schooling (years)	85.0	1	16	8	3
On farm employment					
Months	64.0	1	12	9	4
Off farm income					
Months	19.0	5	12	12	2
income (leks/month)		340	6000	1800	1800
<b>Number of child household members</b>		1	6	2.7	1.6
Age (years)		1	17	8	6
Schooling (years)	51.0	1	11	6	3
On farm employment					
Months	7.0	5	12	10	2

STD : Standard Deviation of the stratum

% : Percent of members in the stratum

Adult : Member > 18 years

Child : Member < 18 years

Table 18. Off-farm main income sources of household members

Off-farm Income Source	Number of Members	% of Members	Income (leks/month)			
			Min.	Max.	Average	STD

**Adult household members**

Private service activities

Farm worker	4	0.18	2000	3000	2600	490
Tractor operator	9	0.40	2800	50000	18139	17027
Agronomist	4	0.18	2800	10300	5275	3397
Miller	2	0.09	4500	14000	9250	6718
Veterinarian	2	0.09	3000	6000	4500	2121
Trader	7	0.31	2000	18000	7857	5460
House constructor	12	0.54	1500	9000	3850	2064
Electrician	5	0.22	2000	7000	4000	2054
Mechanic	7	0.31	2200	5200	4243	1092
Car driver	11	0.49	2800	20000	6582	5141
Safety-guard	7	0.31	1500	3600	2714	747
Cooker and cleaner	5	0.22	1400	10000	4680	3689
Miner	13	0.58	2800	7000	4715	1340
	<b>88</b>	<b>3.94</b>				

Public service activities

Police man	10	0.45	350	6500	4515	1801
Teacher	19	0.85	2300	4400	3453	576
Military worker	15	0.67	1000	5300	2847	1254
Government officer	27	1.21	450	6000	3727	1220
Nurse	7	0.31	2500	3500	3029	373
Priest	1	0.04	5000	5000	5000	
Social Assistance	3	0.13	1500	1500	1500	
	<b>82</b>	<b>3.67</b>				

Pensioners and repatriated income

Retired-pensioner	314	14.04	120	4000	949	696
Repatriated income	64	2.86	400	60000	18038	16672
	<b>378</b>	<b>16.91</b>				

**Total**                      **548**      **24.51**

**Child household members**

Car driver	1	0.07	1800	1800	1800	
Hair maker	1	0.07	330	330	330	
Repatriated income	1	0.07	2000	2000	2000	

STD : Standard Deviation of the sample

% : Percent of the sample

Table 19. Household financial aspects in Abania

Characteristic	Stratum				
	1	2	3	4a	4b

Most difficult month to meet family expenses		(% of the sample)				
January	15.0	22.9	39.7	30.9	32.0	
February	7.3	9.1	11.2	12.7	12.0	
March	28.0	12.0	25.1	32.7	52.0	
April	28.5	31.0	14.5	14.4	4.0	
May	1.9	1.1	0.6	0.0	0.0	
June	1.9	0.0	0.0	1.8	0.0	
July	0.5	0.0	0.0	0.0	0.0	
August	0.0	0.0	0.0	0.0	0.0	
September	0.5	2.3	0.6	0.0	0.0	
October	2.9	1.7	1.1	1.8	0.0	
November	7.7	5.1	1.7	3.6	0.0	
December	5.8	10.9	5.0	1.8	0.0	
<b>Percent</b>	<b>100</b>	<b>96</b>	<b>99</b>	<b>100</b>	<b>100</b>	
<b>Sample</b>	<b>205</b>	<b>175</b>	<b>179</b>	<b>55</b>	<b>25</b>	

Members of the family working abroad		(% of the sample)				
One	12.1	14.9	5.0	7.3	16.0	
Two	1.9	1.1	0.0	0.0	0.0	
Three	1.0	0.6	1.1	0.0	0.0	
Four	0.0	0.7	0.6	0.0	0.0	
<b>Percent</b>	<b>15</b>	<b>17</b>	<b>7</b>	<b>7</b>	<b>16</b>	
<b>Sample</b>	<b>205</b>	<b>175</b>	<b>179</b>	<b>55</b>	<b>25</b>	

Table 20. Credit sources, amount of loan and interest paid by farmers during 1993

Stratum	Source	Number of Farmers	Amount (Leks)			Annual Interest %
			Total	Min	Max.	
Stratum 1	Bank	6	2408000	4000	1700000	27
	Relative	10	308500	3500	70000	10
	Neighbour	8	95500	500	30000	24
	Dealer	2	3000	1000	2000	24
	Other	10	372500	500	200000	28
Stratum 2	Bank	2	490000	230000	260000	26
	Relative	3	226200	11200	200000	10
Stratum 3	Bank	2	1000000	200000	800000	28
	Relative	4	50000	5000	20000	15
Stratum 4a	Bank	1	30000	30000	30000	30
	<b>Total</b>	<b>48</b>	<b>4983700</b>			
	%		<b>7.4</b>			
	Credit from Banks (%) :		<b>2.0</b>			

Table 21. Farmers' responses to question on credit opportunities

Stratum:	Description:	Number of Farmers	% of Stratum
<b>Stratum 1</b>	Not available	31	15.7
	Interest too high	53	26.8
	Too risky	55	27.8
	Not aware of credit	6	3.0
	Does not need credit	45	22.7
	No inputs	3	1.5
	Other	5	2.5
	<b>Total</b>		<b>198</b>
<b>Stratum 2</b>	Not available	50	33.8
	Interest too high	32	21.6
	Too risky	5	6.1
	Not aware of credit	14	9.5
	Does not need credit	34	23.0
	No inputs	6	4.1
	Other	3	2.0
	<b>Total</b>		<b>148</b>
<b>Stratum 3</b>	Not available	59	33.7
	Interest too high	83	47.4
	Too risky	5	2.9
	Not aware of credit	7	4.0
	Does not need credit	9	5.1
	No inputs	11	6.3
	Other	1	0.6
	<b>Total</b>		<b>175</b>
<b>Stratum 4a</b>	Not available	18	33.3
	Interest too high	24	44.4
	Too risky	0	0.0
	Not aware of credit	3	5.6
	Does not need credit	7	13.0
	No inputs	2	3.7
	Other	0	0.0
	<b>Total</b>		<b>54</b>
<b>Stratum 4b</b>	Not available	7	28.0
	Interest too high	2	8.0
	Too risky	4	16.0
	Not aware of credit	2	8.0
	Does not need credit	8	32.0
	No inputs	0	0.0
	Other	2	8.0
	<b>Total</b>		<b>25</b>

Table 22. Number and estimated value of assets in the farms

Stratum	Asset	Number of Farmers (sample)	Value estimated by farmers (Leks)		
			Mean	Min	Max
<b>Stratum 1</b>	Dwelling house	205	681063	10000	4500000
	Storehouse	4	531250	5000	2000000
	Livestock shed	179	27439	500	600000
	Machinery shed	6	101833	1000	200000
	Other shed	29	25183	150	250000
	Small tractor (0<15 HP)	2	106000	12000	200000
	Tractor (15<40 HP)	4	123750	15000	310000
	Tractor (40<60 HP)	3	493333	80000	1200000
	Tractor (60 HP+)	1	700000	-	-
	Combine harvester	2	3750000	500000	7000000
	Other assets	20	73415	300	300000
	Car	7	201714	12000	500000
	Truck	4	300000	50000	700000
	Motorcycle	3	41667	10000	65000
Bicycle	15	7940	100	51000	
<b>Stratum 2</b>	Dwelling house	168	494893	12000	4000000
	Livestock shed	133	22617	700	200000
	Other shed	27	10605	250	100000
	Small tractor (0<15 HP)	2	245000	230000	260000
	Tractor (15<40 HP)	1	300000	-	-
	Tractor (40<60 HP)	1	5000	-	-
	Tractor (60 HP+)	1	380000	-	-
	Other assets	7	17543	300	50000
	Car	4	123750	35000	200000
	Bicycle	8	4625	2000	10000
<b>Stratum 3</b>	Dwelling house	182	252514	10000	1200000
	Livestock shed	150	17230	500	100000
	Other shed	17	18088	500	200000
	Tractor (60 HP+)	1	500000	-	-
	Other assets	6	24083	500	70000
Truck	3	283333	100000	450000	
<b>Stratum 4a</b>	Dwelling house	55	123673	10000	850000
	Livestock shed	49	8994	500	40000
	Machinery shed	2	1850	200	3500
	Other shed	26	8835	50	103150
	Other assets	10	585	50	2000
<b>Stratum 4b</b>	Dwelling house	25	155537	10000	750000
	Livestock shed	20	26200	1000	100000
	Other assets	3	10667	10000	12000
	Truck	1	600000	-	-

Note : for "Other assets ", refers to asset code forms in section 1

Table 23. Main crop and livestock in the agricultural areas

Characteristics	Stratum				
	1	2	3	4a	4b

**Main farm activities** ( % of farmers included )

**Crops**

Wheat	16.55	17.60	12.75	6.82	0.00
Maize	10.35	12.06	14.58	14.36	18.83
Barley	0.67	0.12	0.00	0.36	0.35
Oats	0.33	1.97	1.33	5.03	0.00
Rye	0.00	0.00	0.57	3.23	1.79
Potatoes	0.91	0.80	3.09	4.13	2.24
Beans	6.54	1.42	1.83	2.15	1.35
Sugar beet	0.14	0.00	0.00	0.00	0.00
Sunflower	0.10	0.00	0.00	0.00	0.00
Tobacco	0.05	2.46	0.13	0.00	0.00
Vegetables	7.16	5.23	7.64	5.39	6.28
Alfalfa	8.44	2.46	2.34	1.80	0.45
Green forages	0.95	0.80	0.82	0.18	0.00
Citrus fruits	0.38	0.00	0.00	0.00	0.00
Fruits	3.10	4.86	2.59	3.05	9.87
Grapes	3.34	2.89	1.39	2.15	3.59
Olives	0.00	5.78	0.32	0.00	0.00
Other crops	0.05	0.25	0.00	0.54	0.00
Pasture	0.24	0.18	0.44	0.00	0.00
Maize & beans intercrop	0.00	0.00	0.44	0.00	0.00
Vines & olive trees	0.19	0.00	0.00	0.00	0.00
	<b>59.49</b>	<b>58.88</b>	<b>50.26</b>	<b>49.19</b>	<b>44.75</b>

**Livestock**

Cattle	19.47	21.05	15.91	12.57	7.17
Sheep	5.39	9.17	12.75	15.44	17.94
Goats	0.52	3.63	13.32	10.23	14.35
Donkeys	0.00	0.00	0.13	0.00	0.00
Horses	0.10	0.06	0.06	0.00	0.00
Pigs	3.96	0.55	0.76	0.90	1.35
Chickens	8.73	6.52	6.63	10.95	13.45
Ducks & geese	1.53	0.06	0.06	0.00	0.00
Turkeys	0.43	0.00	0.06	0.54	0.00
Bees	0.10	0.06	0.06	0.00	0.90
	<b>40.23</b>	<b>41.1</b>	<b>49.74</b>	<b>50.63</b>	<b>55.16</b>
Total percent	99.72	99.98	100	99.82	99.91

Table 24. Main crop and livestock output in the agricultural areas

Characteristics	Stratum				
	1	2	3	4a	4b
<b>Main outputs from farms</b>	( % of farmers providing output)				
<b>Crops</b>					
Grain & seed	30.05	32.10	31.40	29.73	23.26
Fruit	3.10	4.85	2.59	3.05	9.87
Leaves	0.05	2.46	0.13	0.00	0.00
Hay	2.24	1.97	2.53	1.26	0.45
Silage	0.24	0.06	0.32	0.18	0.00
Fresh fodder	7.11	1.42	0.63	0.54	0.00
Straw	15.70	15.08	12.50	14.36	10.76
Compost	0.00	0.00	0.06	0.00	0.00
Wine	0.19	0.00	0.00	0.00	0.00
	<b>58.68</b>	<b>57.95</b>	<b>50.16</b>	<b>49.12</b>	<b>44.34</b>
<b>Livestock</b>					
Manure	6.97	6.71	6.63	2.69	3.14
Skins	0.00	0.18	0.19	0.00	0.00
Milk	10.64	13.42	20.33	19.75	21.08
Cheese	0.05	1.17	0.25	0.25	0.22
Butter	0.00	1.21	0.16	0.18	0.25
Yoghour	0.00	1.05	0.00	0.00	0.00
Flece, hair or wool	1.62	3.57	4.17	3.95	4.93
Meat	13.22	8.43	11.87	14.54	15.25
Live animals	0.91	0.86	0.06	1.62	0.45
Eggs	7.01	4.55	6.12	7.90	9.42
Honey	0.10	0.06	0.06	0.00	0.90
	<b>40.52</b>	<b>41.21</b>	<b>49.84</b>	<b>50.88</b>	<b>55.64</b>
Total percent	99.20	99.16	100.00	100.00	99.98

Table 26. Estimates of areas and yields for wheat during the 1993 cropping season

Description	Mean Area (has)		Wheat Yield Production (quintal/ha)			
	Farm	Wheat	Min	Max	Mean	STD

**Stratum**

1	1.87	0.68	4.2	73.0	29.4	13.1
2	1.18	0.40	5.3	63.6	26.9	10.9
3	0.93	0.35	2.1	67.6	22.8	11.3
4a	0.60	0.25	7.7	46.8	19.6	6.6
4b	0.55					

**District**

Berat	0.52	0.28	12.1	42.4	23.9	7.5
Dibra	1.20	0.26	2.1	20.8	11.8	7.6
Durres	1.14	0.48	4.2	50.8	31.6	7.6
Elbasan	1.38	0.65	10.6	62.4	26.8	9.9
Fier	2.30	0.91	5.8	52.6	25.0	10.1
Gjrokaster	1.94	0.29	14.7	35.6	25.2	10.4
Kavaje	1.54	0.58	10.6	73.0	34.7	16.3
Korce	1.14	0.33	10.5	63.5	32.9	18.7
Kruje	1.11	0.44	12.7	50.8	27.9	11.9
Kucove	1.26	0.49	20.7	63.6	36.2	10.9
Kukes	0.40	0.01	23.1	23.1	23.1	
Lac	1.54	0.33	36.3	46.5	39.7	4.7
Lezhe	2.11	0.83	13.2	43.2	29.9	9.8
Librazhd	0.68	0.09	17.1	36.4	26.0	5.3
Malesi e madhe	3.05	0.77	21.2	29.2	26.1	3.0
Mat	0.57	0.11	14.6	55.5	28.6	10.0
Permet	1.76	0.68	10.4	67.6	27.0	17.5
Sarande	1.50	0.11	31.8	38.2	35.1	3.2
Skrapar	1.45	0.54	9.1	31.0	16.3	6.4
Shkoder	0.59	0.09	19.2	63.6	39.6	15.6
Tepelene	1.41	0.77	7.7	46.8	19.6	8.6
Tirane	0.82	0.23	5.3	50.8	22.4	13.6
Vlore	1.06	0.37	14.1	38.1	24.3	7.5
<b>Sample</b>	1.25	0.42	2.1	73.0	26.4	12.1

---

STD : Standard Deviation of the sample

Table 27. Estimates of area and yields for the 1993 maize cropping season.

Description	Mean Area (has)		Maize Yield Production (Quintal/ha)			
	Farm	Maize	Min	Max	Mean	STD

**Stratum**

1	1.87	0.30	1.9	65.0	27.9	19.1
2	1.18	0.25	1.6	66.2	25.3	19.4
3	0.93	0.22	1.2	73.3	23.2	18.0
4a	0.60	0.16	0.9	40.8	19.8	11.1
4b	0.55	0.26	2.0	35.0	15.1	5.6

**District**

Berat	0.52	0.28	3.4	41.0	17.7	9.9
Dibra	1.20	0.15	1.5	12.6	6.3	3.5
Durrës	1.14	0.15	23.4	52.7	34.2	12.5
Elbasan	1.38	0.38	1.7	32.4	12.3	8.1
Fier	2.30	0.38	1.9	65.0	20.9	15.0
Gjrokaster	1.94	0.11	5.9	18.6	12.2	9.0
Kavaje	1.54	0.37	20.4	65.0	44.8	13.9
Korçë	1.14	0.22	13.0	46.9	27.4	12.3
Krujë	1.11	0.12	28.1	70.0	46.5	21.0
Kuovë	1.26	0.05	66.2	66.2	66.2	.
Kukës	0.40	0.05	4.3	40.8	27.0	11.4
Lac	1.54	0.13	58.9	58.9	58.9	.
Lezhe	2.11	0.37	3.9	46.9	23.4	13.0
Librazhd	0.68	0.32	2.0	73.3	30.6	17.9
Malesi e madhe	3.05	0.12	27.2	34.0	30.6	4.8
Mat	0.57	0.19	4.1	44.3	26.5	11.0
Mirdite	0.18	0.09	26.2	36.5	32.7	4.2
Permet	1.76	0.52	1.2	44.9	12.4	12.1
Pukë	0.32	0.18	8.0	35.0	17.4	5.8
Sarandë	1.50	0.23	47.6	66.2	63.1	7.5
Skrapar	1.45	0.41	3.1	12.5	6.7	2.3
Shkodër	0.59	0.10	5.9	70.0	46.1	19.3
Tepelene	1.41	0.27	0.9	21.9	5.0	5.9
Tiranë	0.82	0.25	3.7	65.0	32.4	21.5
Vlorë	1.06	0.26	1.6	43.9	19.4	12.6
<b>Sample</b>	1.25	0.25	0.9	73.3	24.1	17.8

STD . Standard Deviation of the Sample

Table 28. Estimates of areas and yields for potatoes during the 1993 cropping season

Description	Mean Area (has)		Potato Yield Production (Quintal/ha)			
	Farm	Potatoes	Min	Max	Mean	STD

**Stratum**

1	1.87	0.02	10.0	361.2	88.9	83.6
2	1.18	0.01	16.0	186.6	102.3	55.4
3	0.93	0.04	9.0	307.8	96.6	72.6
4a	0.60	0.03	33.0	154.3	80.3	32.3
4b	0.55	0.02	29.0	90.0	65.0	26.1

**District**

Berat	0.52	0.03	16.0	48.0	32.0	22.6
Dibra	1.20	0.28	24.0	143.9	79.0	43.2
Durres	1.14	0.03	28.7	179.9	115.2	64.6
Fier	2.30	0.01	18.0	159.9	92.2	44.5
Korce	1.14	0.16	10.9	154.3	64.8	41.3
Kruje	1.11	0.08	9.0	351.2	67.7	104.2
Kukes	0.40	0.08	33.0	180.0	83.1	43.1
Librazhd	0.68	0.02	29.0	90.0	62.4	29.9
Malesi e madhe	3.05	0.04	186.6	186.6	186.6	.
Mirdite	0.18	0.04	77.0	110.0	99.0	19.1
Puke	0.32	0.02	35.9	144.0	91.0	41.9
Shkoder	0.59	0.01	81.0	307.8	162.3	89.5
Tepelene	1.41	0.02	45.0	116.9	81.0	50.9
<b>Sample</b>	1.25	0.02	9.0	351.2	90.5	49.6

STD : Standard Deviation of the Sample

Table 29. Estimates of area and yields for alfalfa during the 1993 cropping season

Description	Mean Area (has)		Alfalfa Yield Production (Quintal/ha) **			
	Farm	Alfalfa	Min	Max	Mean	STD

**Stratum**

1	1.87	0.36	37.5	495.0	308.2	150.1
2	1.18	0.08	62.4	500.0	212.5	150.0
3	0.93	0.10	46.8	350.0	234.8	117.3
4a	0.60	0.02	96.3	226.0	196.2	66.6
4b	0.55	0.02	124.0	163.4	157.5	42.8

**District**

Fier	2.30	0.15	93.8	495.0	290.7	145.1
Gjirokaster	1.94	0.76	250.0	412.5	303.1	77.6
Korce	1.14	0.16	37.5	226.0	131.8	133.3
Kucove	1.26	0.60	62.4	500.0	225.6	153.8
Kukes	0.40	0.12	96.3	360.0	294.5	92.9
Lac.	1.54	0.11	235.0	495.0	330.0	72.4
Lezhe	2.11	1.41	187.5	483.0	376.3	144.0
Libraznd	0.68	0.07	154.4	300.0	285.1	103.2
Malesi e madhe	3.05	0.35	66.7	66.7	66.7	
Puke	0.32	0.02	96.5	212.3	154.4	81.9
Skrapar	1.45	0.66	46.8	203.2	126.9	52.3
Tepelene	1.41	0.01	144.4	163.4	154.4	34.2
Tirane	0.82	0.01	74.9	74.9	74.9	
Vlore	1.06	0.02	124.0	150.0	135.0	46.0
<b>Sample</b>	1.25	0.32	37.5	500.0	281.1	141.8

STD : Standard Deviation of the Sample

\*\* Total yields in kg/ha of green forage

Table 30. Estimates of area and yields for dry beans during the 1993 cropping season

Description	Mean Area (has)		Dry Beans Yield Production (quintal/ha)			
	Farm	Beans	Min	Max	Mean	STD
<b>Stratum</b>						
1	1.87	0.069	0.7	22.8	10.2	7.1
2	1.18	0.045	3.0	13.3	8.0	3.8
3	0.93	0.038	2.4	16.1	8.3	4.4
4a	0.60	0.026	2.3	9.3	7.4	2.8
4b	0.55	0.024	3.0	14.5	8.1	1.4
<b>District</b>						
Berat	0.52	0.027	3.0	7.5	5.5	2.3
Durres	1.14	0.015	4.3	22.7	13.7	10.5
Elbasan	1.38	0.050	4.5	13.3	7.4	5.1
Fier	2.30	0.157	0.7	22.8	8.2	6.3
Kavaje	1.54	0.010	9.7	14.5	12.1	3.4
Korce	1.14	0.003	4.4	4.4	4.4	.
Kruje	1.11	0.193	3.6	22.5	10.9	5.9
Kucove	1.26	0.020	13.3	13.3	13.3	.
Kukes	0.40	0.004	9.3	9.7	9.4	2.0
Lac	1.54	0.017	3.8	3.8	3.8	.
Lezhe	2.11	0.045	8.7	21.3	17.3	5.3
Librazhd	0.68	0.037	6.9	16.1	10.6	3.7
Malesi e madhe	3.05	0.044	6.4	6.4	6.4	.
Mat	0.57	0.012	7.3	7.3	7.3	.
Puke	0.32	0.091	2.4	2.4	2.4	.
Shkoder	0.59	0.004	1.5	18.8	12.1	6.9
Tepelene	1.41	0.035	2.3	9.3	6.4	3.0
Tirane	0.82	0.024	7.5	13.1	9.9	2.9
Vlore	1.08	0.024	3.0	14.5	8.3	5.8
<b>Sample</b>	1.25	0.043	0.7	22.8	9.5	6.3

STD : Standard Deviation of the sample

Table 31. Main livestock activities and purposes in farming systems

Stratum	Livestock Activity	Purposes	Number of Animals	Portion in Total Sample %	No. per Farm		
					Mean	Min	Max.
Stratum 1	Cattle	Breeding females	238	34	1.16	1	3
	Cattle	Farming operations	17	30	0.08	0	3
	Sheep	Breeding females	289	15	1.41	1	18
	Goats	Breeding females	35	2	0.17	0	9
	Equine	Farming operations	37	27	0.18	0	2
	Pigs	Females	73	89	0.35	0	2
	Chickens			964	35	4.70	0
Stratum 2	Cattle	Breeding females	198	27	1.04	0	3
	Cattle	Farming operations	7	12	0.04	0	2
	Sheep	Breeding females	429	27	2.37	2	42
	Goats	Breeding females	230	13	1.27	1	37
	Equine	Farming operations	21	16	0.12	0	1
	Pigs	Females	6	7	0.03	0	1
	Chickens			568	21	3.14	0
Stratum 3	Cattle	Breeding females	194	28	1.07	0	3
	Cattle	Farming operations	22	39	0.12	0	1
	Sheep	Breeding females	506	32	2.78	1	65
	Goats	Breeding females	917	51	5.04	2	75
	Equine	Farming operations	52	39	0.31	0	2
	Pigs	Females	3	4	0.02	0	1
	Chickens			822	30	4.52	0
Stratum 4a	Cattle	Breeding females	56	8	1.02	1	2
	Cattle	Farming operations	10	18	0.18	0	2
	Sheeps	Breeding females	236	15	4.29	2	26
	Goats	Breeding females	339	19	6.16	2	50
	Equine	Farming operations	15	11	0.31	0	1
	Chickens			221	8	4.02	0
Stratum 4b	Cattle	Breeding females	21	2	0.85	0	2
	Cattle	Farming operations	1	2	0.04	0	1
	Sheep	Breeding females	103	7	4.13	2	25
	Goats	Breeding females	280	16	11.22	2	35
	Equine	Farming operations	10	7	0.40	1	1
	Chickens			164	6	6.56	0

**Table 32.** Livestock production per year in main farm activities period April 1993 - May 1994

Stratum	Activity	Item Unit	Amount per farm	Standard Deviation
Stratum 1	Cattle	Milk (kg)	1965	1013
	Cattle	Meat (kg)	55	60
	Sheep	Milk (kg)	65	45
	Sheep	Meat (kg)	32	22
	Goats	Milk (kg)	12	15
	Goats	Meat (kg)	6	4
	Pigs	Meat (kg)	63	120
	Chickens	Eggs (no )	509	279
Stratum 2	Cattle	Milk (kg)	1485	643
	Cattle	Meat (kg)	19	21
	Sheep	Milk (kg)	102	93
	Sheep	Meat (kg)	17	24
	Goats	Milk (kg)	107	96
	Goats	Meat (kg)	11	13
	Pigs	Meat (kg)	5	16
	Chickens	Eggs (no )	791	350
Stratum 3	Cattle	Milk (kg)	890	355
	Cattle	Meat (kg)	15	12
	Sheep	Milk (kg)	136	119
	Sheep	Meat (kg)	30	35
	Goats	Milk (kg)	368	245
	Goats	Meat (kg)	32	31
	Pigs	Meat (kg)	5	13
	Chickens	Eggs (no )	458	285
Stratum 4a	Cattle	Milk (kg)	757	311
	Cattle	Meat (kg)	27	24
	Sheep	Milk (kg)	176	190
	Sheep	Meat (kg)	18	21
	Goats	Milk (kg)	425	305
	Goats	Meat (kg)	22	32
	Pigs	Meat (kg)	11	15
	Chickens	Eggs (no )	521	282
Stratum 4b	Cattle	Milk (kg)	526	343
	Cattle	Meat (kg)	3	-
	Sheep	Milk (kg)	165	158
	Sheep	Meat (kg)	23	25
	Goats	Milk (kg)	643	358
	Goats	Meat (kg)	42	50
	Pigs	Meat (kg)	9	14
	Chickens	Eggs (no )	301	122

Note: Milk production does not include milk consumed by calves

Table 33. Estimates of physical performance and farm indicators for the sample area

Characteristics	Stratum				
	1	2	3	4a	4b
<b>Total number of farms</b>	205	181	182	55	25
<b>Average farm area (ha)</b>	1.87	1.18	0.93	0.60	0.55
<b>Main crop areas (ha/farm)</b>					
Wheat	0.68	0.40	0.35	0.25	-
Maize	0.30	0.25	0.22	0.16	0.26
Alfalfa	0.36	0.08	0.10	0.02	0.02
Potatoes	0.02	0.01	0.04	0.03	0.02
Vegetables	0.07	0.05	0.04	0.03	0.02
<b>Average crop production (q/ha)</b>					
Wheat	29.4	26.9	22.8	19.6	-
Maize	27.9	25.3	23.2	19.8	15.1
Alfalfa (green forage)	308.2	212.5	234.8	196.2	157.5
Potatoes	88.9	102.3	96.6	80.3	65.0
Vegetables (dry beans)	10.2	8.0	8.3	7.4	8.1
<b>Average cereal unit per farm</b>					
Wheat	29.4	25.9	22.8	18.2	-
Maize	29.2	24.6	23.2	18.1	12.4
Potatoes	53.3	60.2	58.6	49.2	40.7
Vegetables (dry beans)	7.2	5.7	5.7	5.3	5.7
<b>Livestock for meat, milk, and breeding (number of animals per farm)</b>					
Cattle	1.90	1.38	1.68	1.29	1.04
Sheep	1.51	2.59	3.54	4.84	5.40
Goats	0.20	1.34	6.94	10.38	19.60
<b>Milk production in (kg/farm per year)</b>					
Cattle	1965	1485	890	757	526
Sheep	65	102	136	176	165
Goats	12	107	366	425	673
<b>Milk production in (kg/animal per year)</b>					
Cattle	1694	1427	832	743	619
Sheep	46	43	49	41	40
Goats	72	84	73	69	60
<b>Meat production in (kg/farm per year)</b>					
Cattle	55	19	15	27	3
Sheep	32	17	30	18	23
Goats	6	11	32	22	42
<b>Farm Index (average)</b>					
Total grain units	119.1	116.4	110.3	90.8	58.8
Total animal units	3.6	2.7	2.7	2.6	3.1

\* Period covered: 01-04-93 to 01-04-94

Table 34. Prices of main products and inputs in the sample areas

Item	Prices (leks)		
	Mean	Min	Max
<b>Fertilizer prices (leks/kg)</b>			
Urea	28.0	20.0	35.0
Ammonium nitrate (AN)	23.3	17.0	30.0
Superphosphate (SSP)	9.5	8.0	18.1
Diammonium phosphate (DAP)	23.2	15.0	35.1
<b>Seed prices (leks/kg)</b>			
Wheat	20.5	14.0	25.0
Maize	22.0	16.0	40.0
Barley	15.8	12.0	28.0
Oats	25.9	20.0	43.0
Rye	14.0	7.0	20.0
Winter potatoes	26.7	15.0	40.0
Broad beans	42.1	20.0	60.0
Sugar beet	43.3	30.0	50.0
Rice	55.0	23.0	69.0
* Tobacco leaves	165.0	120.0	240.0
Grapes	48.0	45.0	65.0
* Leaves and green forrage	6.0	1.0	10.0
Silage	10.0	2.0	15.0
Hay	8.0	4.0	12.0
<b>Livestock (leks/kg)</b>			
Cow milk	23.0	21.3	26.5
Sheep milk	22.0	21.0	35.0
Sheep meat	220.0	150.0	280.0
Goat milk	19.0	15.0	25.0
Goat meat	200.0	130.0	250.0
Chicken meat	154.0	152.0	161.0
Eggs (piece)	8.2	7.2	9.0
Domestic cows (head)	32000.0	25000.0	37000.0
Imported cows (head)	50000.0	40000.0	58000.0
Sheep (head)	4500.0	3400.0	6000.0
Goats (head)	4000.0	3000.0	5400.0
<b>Other (leks/kg)</b>			
Honey bees	150.0	100.0	240.0
Fleece hair or wool	140.0	100.0	200.0
Skins	50.0	40.0	65.0
Wine	50.0	40.0	110.0
Grape raki	70.0	40.0	140.0
Cheese	60.0	40.0	120.0
Fresh butter	80.0	60.0	140.0

Table 35. Estimates of farm profits for sample farms in stratum 1

<b>1. Total number of farms = 199</b>				
<b>2. Average area = 1.87 hectares</b>				
<b>3. Farming period covered : May 1-1993 to May 1-1994</b>				
<b>4. Farm profit statement (leks)</b>				
<b>4a. Output</b>	<b>Cash</b>	<b>Kind</b>	<b>Total</b>	<b>%</b>
Wheat (0.69 ha)	16300	14200	30500	19.8
Maize (0.30 ha)	8380	6500	14880	9.7
Potatoes (0.03 ha)	3640	2428	6068	3.9
Vegetables (0.07 ha)	6245	9300	15545	10.1
Other crops (alfalfa 0.36ha+)	5820	3647	9467	6.1
Milk	22511	20096	42517	27.6
Meat	12653	9299	21952	14.3
Live animals	2236	0	2236	1.5
Other livestock prod.	5695	5105	10800	7.0
<b>Total</b>	<b>83480</b>	<b>70485</b>	<b>153965</b>	<b>100.0</b>
<b>4b. Variable costs</b>				
Seed			5591	13.1
Fertilizer			8904	20.9
Chemical sprays			379	0.9
Irrigation			596	1.4
Contract machinery			16542	38.9
Misc. crop expenses			395	0.9
Animal feed			4722	11.1
Vet. med. and A.I.			1472	3.5
Live Animals			2963	7.0
Grazing rent			60	0.1
Misc. livestock exp.			395	0.9
Hired labour			501	1.2
<b>Total</b>			<b>42520</b>	<b>100.0</b>
<b>Gross margin (leks)</b>			<b>111445</b>	
<b>4c. Fixed costs</b>				
General contract work			3022	15.7
Machinery repairs			2605	13.5
Kerosene			1214	6.3
Gasoline			3517	18.2
Diesel			159	0.8
Electricity			3054	15.8
Transport for purchases			278	1.4
Transport for marketing			471	2.4
Storage			26	0.1
Miscellaneous overheads			4450	23.1
Interest			502	2.6
<b>Total</b>			<b>19298</b>	<b>100.0</b>
<b>Net income (leks)</b>			<b>92147</b>	

Table 36. Estimates of farm profits for sample farms in stratum 2

1. Total number of farms =	177			
2. Average area =	1.18 hectares			
3. Farming period covered :	May 1-1993 to May 1-1994			
<b>4. Farm profit statement (leks)</b>				
<b>4a. Output</b>	<b>Cash</b>	<b>Kind</b>	<b>Total</b>	<b>%</b>
Wheat (0.42 ha)	6640	12650	19290	17.3
Maize (0.24 ha)	3840	5800	9640	8.6
Potatoes (0.03 ha)	3058	2570	5628	5.0
Vegetables (0.04 ha)	2461	3639	6100	5.5
Other crops (alfalfa 0.08 ha +..)	17141	6752	23893	21.4
Milk	16360	14729	31089	27.8
Meat	4429	3899	8328	7.4
Live animals	1094	942	2036	1.8
Other livestock prod.	3577	2228	5805	5.2
<b>Total</b>	<b>58600</b>	<b>53209</b>	<b>111809</b>	<b>100.0</b>
<b>4b. Variable costs</b>				
Seed			2384	9.0
Fertilizer			3753	14.2
Chemical sprays			366	1.4
Irrigation			58	0.2
Contract machinery			9251	35.1
Misc crop expenses			228	0.9
Animal feed			5489	20.8
Vet. med and A.I			1360	5.2
Live animals			1457	5.5
Grazing rent			463	1.8
Misc livestock exp			228	0.9
Hired labour			1342	5.1
<b>Total</b>			<b>26379</b>	<b>100.0</b>
<b>Gross margin (leks)</b>			<b>85430</b>	
<b>4c. Fixed costs</b>				
General contract work			85	1.6
Machinery repairs			254	4.7
Kerosene			399	7.4
Gasoline			1909	35.4
Diesel			132	2.4
Electricity			1893	35.1
Transport for purchases			84	1.6
Transport for marketing			188	3.5
Storage			0	0.0
Miscellaneous overheads			446	8.3
Interest			0	0.0
<b>Total</b>			<b>5390</b>	<b>100.0</b>
<b>Net income (leks)</b>			<b>80040</b>	

Table 37. Estimates of farm profits for sample farms in stratum 3

<b>1. Total number of farms =</b>	<b>166</b>			
<b>2. Average area =</b>	<b>0.93 hectares</b>			
<b>3. Farming period covered :</b>	<b>May 1-1993 to May 1-1994</b>			
<b>4. Farm profit statement (leks)</b>				
<b>4a. Output</b>	<b>Cash</b>	<b>Kind</b>	<b>Total</b>	<b>%</b>
Wheat (0.35 ha)	3840	10460	14300	15.0
Maize (0.22 ha)	3230	6140	9370	9.8
Potatoes (0.04 ha)	4550	3790	8340	8.8
Vegetables (0.03 ha)	2940	1693	4633	4.9
Other crops (alfalfa 0.10 ha +..)	8293	3280	11573	12.2
Milk	15971	12285	28256	29.7
Meat	5611	8499	14110	14.8
Live animals	120	0	120	0.1
Other livestock prod.	2404	2083	4487	4.7
<b>Total</b>	<b>46959</b>	<b>48230</b>	<b>95189</b>	<b>100.0</b>
<b>4b. Variable costs</b>				
Seed			1180	5.5
Fertilizer			4282	20.1
Chemical sprays			371	1.7
Irrigation			274	1.3
Contract machinery			5209	24.5
Misc. crop expenses			133	0.6
Animal feed			5400	25.4
Vet. med. and A.I.			1326	6.2
Live animals			1699	8.0
Grazing rent			468	2.2
Misc. livestock exp.			133	0.6
Hired labour			803	3.8
<b>Total</b>			<b>21278</b>	<b>100.0</b>
<b>Gross margin (leks)</b>			<b>73911</b>	
<b>4c. Fixed costs</b>				
General contract work			228	8.0
Machinery repairs			150	5.3
Kerosene			415	14.6
Gasoline			60	2.1
Diesel			409	14.4
Electricity			877	30.9
Transport for purchases			215	7.6
Transport for marketing			186	6.6
Storage			0	0.0
Miscellaneous overheads			296	10.4
Interest			0	0.0
<b>Total</b>			<b>2836</b>	<b>100.0</b>
<b>Net income (leks)</b>			<b>71075</b>	

Table 38. Estimates of farm profits for sample farms in stratum 4a

<b>1. Total number of farms =</b>	<b>28</b>			
<b>2. Average area =</b>	<b>0.60 hectares</b>			
<b>3. Farming period covered :</b>	<b>May 1-1993 to May 1-1994</b>			
<b>4. Farm profit statement (leks)</b>				
<b>4a. Output</b>	<b>Cash</b>	<b>Kind</b>	<b>Total</b>	<b>%</b>
Wheat (0.30 ha)	936	10614	11550	15.3
Maize (0.22 ha)	1490	6280	7770	10.3
Potatoes (0.02 ha)	650	2400	3050	4.0
Vegetables (0.04 ha)	1200	7439	8639	11.5
Other crops (alfalfa 0.01 ha +..)	1582	2034	3616	4.8
Milk	3840	11195	15035	19.9
Meat	4430	10278	14708	19.5
Live animals	4521	260	4781	6.3
Other livestock prod.	2304	3983	6287	8.3
<b>Total</b>	<b>20953</b>	<b>54483</b>	<b>75436</b>	<b>100.0</b>
<b>4b. Variable costs</b>				
Seed			1120	7.1
Fertilizer			4437	28.2
Chemical sprays			8	0.1
Irrigation			0	0.0
Contract machinery			2086	13.3
Misc. crop expenses			0	0.0
Animal feed			5230	33.2
Vet. med. and A.I.			1645	10.5
Live animals			739	4.7
Grazing rent			170	1.1
Misc. livestock exp.			0	0.0
Hired labour			304	1.9
<b>Total</b>			<b>15739</b>	<b>100.0</b>
<b>Gross margin (leks)</b>			<b>59697</b>	
<b>4c. Fixed costs</b>				
General contract work			48	4.0
Machinery repairs			0	0.0
Kerosene			60	4.9
Gasoline			154	12.7
Diesel			0	0.0
Electricity			630	51.9
Transport for purchases			130	10.7
Transport for marketing			0	0.0
Storage			0	0.0
Miscellaneous overheads			187	15.4
Interest			4	0.3
<b>Total</b>			<b>1213</b>	<b>100.0</b>
<b>Net income (leks)</b>			<b>58484</b>	

Table 39. Estimates of farm profits for sample farms in stratum 4b

1. Total number of farms =	22			
2. Average area =	0.55 hectares			
3. Farming period covered :	May 1-1993 to May 1-1994			
<b>4. Farm profit statement (leks)</b>				
<b>4a. Output</b>	<b>Cash</b>	<b>Kind</b>	<b>Total</b>	<b>%</b>
Wheat (0.00 ha)	0	0	0	0.0
Maize (0.25 ha)	546	10340	10886	16.5
Potatoes (0.02 ha)	395	1464	1859	2.8
Vegetables (0.03 ha)	1100	3650	4750	7.2
Other crops (alfalfa 0.02 ha +..)	4890	2964	7854	11.9
Milk	7645	8450	16095	24.4
Meat	2526	12345	14871	22.5
Live animals	0	3600	3600	5.5
Other livestock prod	2960	3086	6046	9.2
<b>Total</b>	<b>20062</b>	<b>45899</b>	<b>65961</b>	<b>100.0</b>
<b>4b. Variable costs</b>				
Seed			514	4.2
Fertilizer			3197	26.2
Chemical sprays			56	0.5
Irrigation			0	0.0
Contract machinery			390	3.2
Misc crop expenses			150	1.2
Animal feed			3859	31.7
Vet med and A.I.			1528	12.5
Live animals			1200	9.8
Grazing rent			248	2.0
Misc livestock exp.			1050	8.6
Hired labour			0	0.0
<b>Total</b>			<b>12192</b>	<b>100.0</b>
<b>Gross margin (leks)</b>			<b>53769</b>	
<b>4c. Fixed costs</b>				
General contract work			0	0.0
Machinery repairs			20	1.2
Kerosene			453	26.4
Gasoline			150	8.7
Diesel			300	17.5
Electricity			170	9.9
Transport for purchases			156	9.1
Transport for marketing			0	0.0
Storage			0	0.0
Miscellaneous overheads			468	27.3
Interest			0	0.0
<b>Total</b>			<b>1717</b>	<b>100.0</b>
<b>Net income (leks)</b>			<b>52052</b>	

Table 40. Economic indicators of agricultural activities in sample area

Indicator	Unit	Strata				
		1	2	3	4a	4b
Average farm area	(ha)	1.87	1.18	0.93	0.6	0.55
Average annual crop area	(ha)	1.09	0.73	0.64	0.58	0.33
Annual crop use	(%)	58	62	69	97	55
Animal units (AU)	(unit/ farm)	3.6	2.7	2.7	2.6	3.1
Annual crop output value	(leks/farm)	66993	40658	36643	31009	17495
	(leks/ha)	61461	55696	57255	53464	58317
Livestock output value	(leks/farm)	77505	47258	46973	40811	40612
	(leks/ha)	41008	40049	49445	68018	73480
	(leks/AU)	33698	26254	22638	22673	20306
Variable cost annual crops	(leks/farm)	32407	16040	11449	7651	4307
	(leks/ha)	29731	21973	17889	13191	14357
Variable cost livestock	(leks/farm)	10113	10339	9829	8088	7885
	(leks/ha)	5351	8762	10346	13480	14336
	(leks/AU)	4397	5744	4680	3851	3943
Gross margin annual crops	(leks/farm)	34586	24618	25194	23358	13188
	(leks/ha)	31730	33723	39336	40272	43960
Gross margin livestock	(leks/farm)	67392	36919	37144	32723	32727
	(leks/ha)	35657	31287	39099	54358	59504
	(leks/AU)	29301	20511	17688	18821	16364
Total gross margin	(leks/farm)	111445	85430	73911	59697	53769
Net income	(leks/farm)	92147	80040	71075	58484	52052
Benefit-Cost ratio		2.62	3.24	3.47	3.79	4.41

Table 41. Main physical constraints in crop production in AI

Stratum	Number of Farmers	Constraint	Score Mean	Score STD
<b>Stratum 1<sup>*</sup></b>	209	Irrigation	7.6	1.7
		Mechanization	5.0	1.5
		Fertilizers	3.7	1.9
		Seed	2.3	2.0
		Other	1.1	0.7
<b>Stratum 2</b>	179	Irrigation	9.1	1.3
		Mechanization	4.1	1.9
		Fertilizers	2.6	2.3
		Seed	1.9	3.0
		Other	1.2	1.5
<b>Stratum 3</b>	179	Irrigation	8.8	1.5
		Mechanization	4.2	2.8
		Fertilizers	3.5	3.0
		Seed	2.3	2.7
		Other	1.0	0.5
<b>Stratum 4a</b>	55	Irrigation	7.0	2.3
		Mechanization	5.3	2.2
		Fertilizers	6.5	3.6
		Seed	3.1	3.3
		Other	1.4	1.2
<b>Stratum 4b</b>	25	Irrigation	5.7	3.7
		Mechanization	7.1	2.2
		Fertilizers	4.9	4.2
		Seed	1.0	1.2
		Other	1.0	0.6

Score used : Very limiting = 10.0  
 Limiting = 7.5  
 Somewhat limiting = 5.0  
 Low limitation = 2.5  
 No limitation = 0.0

Table 42. Agricultural area with mineral fertilization

Crop*	Area with Mineral Fertilizers ( has)**					Total	%***
	1	2	3	4a	4b		
Wheat	42261 (63)	24906 (61)	19486 (45)	1301 (25)	0 -	87954	47.8
Maize	19690 (47)	5511 (21)	20296 (55)	2777 (37)	1728 (75)	50002	27.1
Barley	200 (15)	20 (29)	0 -	10 (31)	0 -	230	0.1
Oats	480 (37)	40 (3)	208 (7)	0 -	0 -	728	0.4
Rye	0 -	0 -	283 (10)	0 -	0 -	283	0.2
Potatoes	640 (31)	590 (33)	2474 (42)	126 (19)	47 (25)	3877	2.1
Dry beans	1184 (12)	56 (2)	301 (6)	7 (1)	9 -	1557	0.8
Tobacco	44 (1)	116 (2)	0 -	0 -	0 -	160	0.1
Vegetables	6052 (45)	1930 (36)	5955 (50)	624 (23)	480 (40)	15041	8.2
Alfalfa	17127 (33)	1857 (21)	2296 (21)	400 (29)	151 (31)	21831	11.9
Green forage	867 (8)	240 (3)	1420 (17)	0 -	0 -	2527	1.4
<b>Total</b>	<b>88545</b>	<b>35266</b>	<b>52719</b>	<b>5245</b>	<b>2415</b>	<b>184190</b>	
<b>%***</b>	<b>48.1</b>	<b>19.1</b>	<b>28.6</b>	<b>2.8</b>	<b>1.3</b>		<b>100</b>

\* Main crops from survey

\*\* Numbers in parentheses are percentages of area with mineral fertilizer over the total area of the crop in each stratum

\*\*\*Percent of area over total fertilized area

Total crop and stratum area are based on ASF results.

Note: The area sample has been expanded to national level using ratio estimation statistics

Table 43 Mineral and organic fertilizer used per crop in stratum 1

Crop	Fertilizer	Area by Fertilizer Product		Rate (kg/ha)
		(has)	%*	
Wheat	Organic	6412	14	2000
	Urea	34108	75	220
	AN	16667	37	180
	SSP	6625	15	450
	DAP	15678	35	140
Maize	Organic	13163	67	3500
	Urea	11983	61	240
	AN	4048	21	200
	SSP	1608	8	450
	DAP	3328	17	160
Barley	Urea	200	15	200
Oats	Urea	340	71	220
	AN	140	29	160
	DAP	140	29	150
Potatoes	Organic	580	91	3000
	Urea	110	17	200
	DAP	60	9	200
Beans	Organic	818	69	2000
	Urea	462	39	150
	AN	256	22	120
	DAP	470	40	200
Tobacco	Organic	44	1	400
Vegetables	Organic	5582	92	1400
	Urea	2086	34	200
	AN	1232	20	140
	SSP	346	6	400
	DAP	730	12	200
Alfalfa	Organic	13758	80	2000
	Urea	3579	21	180
	AN	2116	12	120
	SSP	2696	16	450
	DAP	2412	14	200
Green forage	Organic	650	75	600
	Urea	167	19	200
	AN	549	63	120

\* Calculated as percent of total crop area with mineral fertilization

Table 44. Mineral and organic fertilizer used per crop in stratum 2

Crop	Fertilizer	Area by Fertilizer Product		Rate kg/ha
		(has)	%*	
Wheat	Organic	2672	12	2200
	Urea	19189	85	180
	AN	4395	19	140
	SSP	3527	16	350
	DAP	12764	56	160
Maize	Organic	2140	39	2000
	Urea	4038	73	140
	AN	869	16	120
	SSP	2730	50	380
	DAP	1426	26	160
Barley	AN	17	85	140
Oats	Urea	30	75	120
Potatoes	Organic	590	100	2000
	DAP	420	71	300
Beans	Organic	20	100	600
	AN	20	36	100
Tobacco	Organic	78	67	1200
	AN	48	41	120
Vegetables	Organic	1795	93	1000
	Urea	701	36	120
	AN	564	29	100
	SSP	137	2	350
	DAP	284	15	160
Alfalfa	Organic	1050	57	1200
	Urea	590	32	120
	AN	41	2	150
	SSP	185	10	300
	DAP	1405	76	180
Green forage	Organic	65	27	1000
	Urea	177	74	120
	DAP	63	26	150

\* Calculated as percent of total crop area with mineral fertilization

Table 45. Mineral and organic fertilizer used per crop in stratum 3

Crop	Fertilizer	Area by Fertilizer Product		Rate (kg/ha)
		(has)	%*	
Wheat	Organic	6584	33.8	3000
	Urea	12764	65.5	185
	AN	5656	29.0	140
	SSP	2274	11.7	350
	DAP	1763.2	9.0	200
Maize	Organic	13566	66.8	4000
	Urea	13184.1	65.0	220
	AN	684.9	3.4	150
	SSP	1975.5	9.7	350
	DAP	1200	5.9	180
Oats	Organic	156	75.0	2000
	Urea	52	25.0	180
	AN	156	75.0	160
	SSP	52	25.0	250
Rye	Organic	256.5	90.8	2200
	Urea	78	27.6	180
	AN	156	55.2	160
	SSP	86	30.4	250
Potatoes	Organic	2474	100.0	3200
	Urea	629.5	25.4	180
	AN	445	18.0	180
	SSP	569.5	23.0	400
Dry Beans	Organic	179	59.5	700
	AN	122	40.5	160
Vegetables	Organic	4550	76.4	3000
	Urea	2493	41.9	160
	AN	1949	32.7	120
Alfalfa	Organic	1206	52.5	600
	DAP	1093.2	47.6	160
Green Forage	Organic	432.6	30.6	1000
	Urea	338.8	23.9	160
	AN	868.5	61.2	180
	SSP	450	31.7	300

\* Calculated as percent of total crop area with mineral fertilization

Table 46. Mineral and organic fertilizer used per crop in stratum 4

Crop	Fertilizer	Area by Fertilizer Product		Rate (kg/ha)
		(has)	%*	

**Stratum 4a**

Wheat	Organic	1301	100	1600
	Urea	885	68	200
	SSP	949	73	250
Maize	Organic	2777	100	4000
	AN	2200	93	180
	SSP	1400	49	320
Barley	Organic	10	100	1200
	AN	6	60	1800
Potatoes	Organic	126	100	2500
Dry Beans	Organic	7	100	3200
Vegetables	Organic	624	100	1800
Alfalfa	Organic	400	100	2100
	DAP	188	47	300

**Stratum 4b**

Maize	Organic	1607	93	2900
	Urea	796	46	180
	AN	868	50	90
	SSP	175	10	350
Potatoes	Organic	20	43	1600
	AN	47	100	150
Dry Beans	Organic	9	100	1400
	AN	9	100	120
Vegetables	Organic	480	100	1100
	Urea	230	17	140
	AN	240	50	120
Alfalfa	Organic	132	88	2000
	DAP	118	79	120

\*Calculated as percent of total crop area with mineral fertilization

Table 47. Area fertilized with mineral and organic fertilizers

Crop	Fertilizer	Strata (ha)					Total	
		1	2	3	4a	4b	ha	%
Wheat	Organic	6412	2672	6584	1301	-	16969	9.21
	Urea	34108	19189	12764	885	-	66945	36.35
	AN	16367	4395	5656	-	-	26718	14.51
	SSP	6625	3527	2274	949	-	13375	7.26
	DAP	15678	12764	1763	-	-	30206	16.40
Maize	Organic	13163	2140	13566	2777	1607	33253	18.05
	Urea	11983	4036	13184	-	796	30000	16.29
	AN	4048	869	685	2200	868	8670	4.71
	SSP	1608	2730	1976	1400	175	7889	4.28
	DAP	3328	1426	1200	-	-	5954	3.23
Barley	Organic	-	-	-	10	-	10	0.01
	Urea	200	-	-	-	-	200	0.11
	AN	-	17	-	6	-	23	0.01
Oats	Organic	-	-	156	-	-	156	0.08
	Urea	340	30	52	-	-	422	0.23
	AN	140	-	156	-	-	296	0.16
	DAP	140	-	-	-	-	140	0.08
	SSP	-	-	52	-	-	52	0.03
Rye	Organic	-	-	257	-	-	257	0.14
	Urea	-	-	78	-	-	78	0.04
	AN	-	-	156	-	-	156	0.08
	SSP	-	-	86	-	-	86	0.05
Potatoes	Organic	580	590	2474	126	20	3790	2.06
	Urea	110.0	-	630	-	-	740	0.40
	AN	-	-	445	-	47	492	0.27
	DAP	60	420	-	-	-	480	0.26
	SSP	-	-	570	-	-	570	0.31
Beans	Organic	818	20	1479	7	9	1033	0.56
	Urea	462	-	-	-	-	462	0.25
	AN	256	20	122	-	9	407	0.22
	DAP	470	-	-	-	-	470	0.26
Tobacco	Organic	44	78	-	-	-	122	0.07
	AN	-	48	-	-	-	48	0.03
Vegetables	Organic	5582	1795	4550	624	480	13031	7.07
	Urea	2086	701	2493	-	230	5510	2.99
	AN	1232	564	1949	-	240	3985	2.16
	SSP	346	137	-	-	-	483	0.25
	DAP	730	284	-	-	-	1014	0.55
Alfalfa	Organic	13758	1050	1206	400	132	16546	8.98
	Urea	3579	590	-	-	-	4169	2.26
	AN	2116	41	-	-	-	2157	1.17
	SSP	2696	185	-	-	-	2880	1.56
	DAP	2412	1405	1093	188	118	5216	2.83
Green Forage	Organic	650	65	433	-	-	1147	0.62
	Urea	167	177	339	-	-	683	0.37
	AN	549	-	869	-	-	1418	0.77
	SSP	-	-	450	-	-	450	0.24
	DAP	-	63	-	-	-	63	0.03
Total area fertilized (ha)							184190	

Table 48. Summary results of survey on fertilizer use in Albania

Characteristic	Fertilizer Use per Stratum						
	1	2	3	4a	4b	Total	%
<b>Fertilizer product (mt)</b>							
Urea	11680	4199	5651	177	175	22082	48
Ammonium nitrate (AN)	4355	792	1434	397	115	7093	15
Single superphosphate (SSP)	5056	2375	1885	685	61	10062	22
Diammonium phosphate (DAP)	3483	2704	744	56	15	7002	15
Total	24574	10070	9914	1315	366	46239	100
Organic Fertilizer (mt)	91246	14564	97741	15501	5495	224547	
<b>Area (has)</b>							
Urea	53034	24724	29539	885	1025	109207	20
Ammonium nitrate (AN)	25009	5954	10037	2206	1163	44369	8
Single superphosphate (SSP)	11275	6579	5407	2349	175	25785	5
Diammonium phosphate (DAP)	22818	16362	4056	188	118	43542	8
Organic fertilizer	41006	8410	29404	5245	2247	86312	
Total Arable Land (has)						543789	

Table 49. Main constraints in fertilizer use by farmers

Constraint	Number and Percent by Stratum					Total	
	1	2	3	4a	4b	Number	%
High prices	71 44.6	41 36.3	42 26.3	33 33.7	7 18.9	194	34.2
No money	59 37.1	40 35.4	49 30.6	14 14.3	5 13.6	167	29.5
No transportation	0 0.0	7 6.2	32 20.0	6 6.1	3 8.1	48	8.5
No available	10 6.3	10 8.9	25 15.6	16 16.3	11 29.7	72	12.7
No land	0 0.0	4 3.5	7 4.4	7 7.1	4 10.8	22	3.9
No irrigation	12 7.6	6 5.3	1 0.6	4 4.1	0 0.0	23	4.1
High price of transportation	5 3.1	1 0.9	3 1.9	6 6.1	2 5.4	17	3.0
Do not know how to use it	2 1.3	4 3.5	1 0.6	12 12.5	5 13.5	24	4.2
Total	159	113	160	98	37	567	100.0
%	100.0	100.0	100.0	100.0	100.0		

HARTA ADMINISTRATIVE e SHQPERISE

ADMINISTRATIVE MAP of ALBANIA

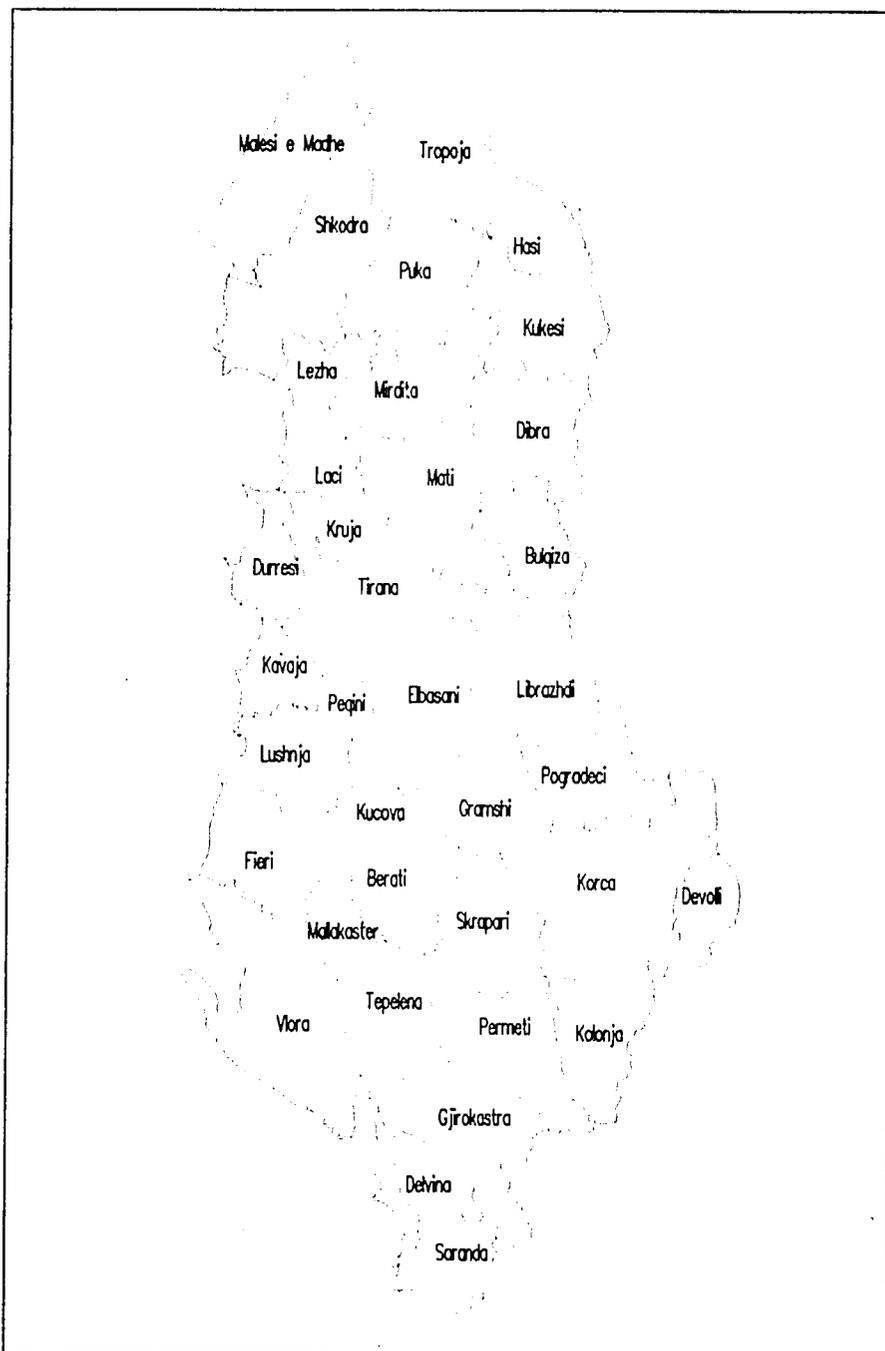


FIGURE 1

Starting from 1992 there are 36 districts instead of 26 districts

SHPERNDARJA e SPERFACEVE sipas ZONAVE te VEZHGUARA te TOKAVE BUQESORE  
AREA DISTRIBUTION of AGRICULTURAL LAND SURVEY STRATA

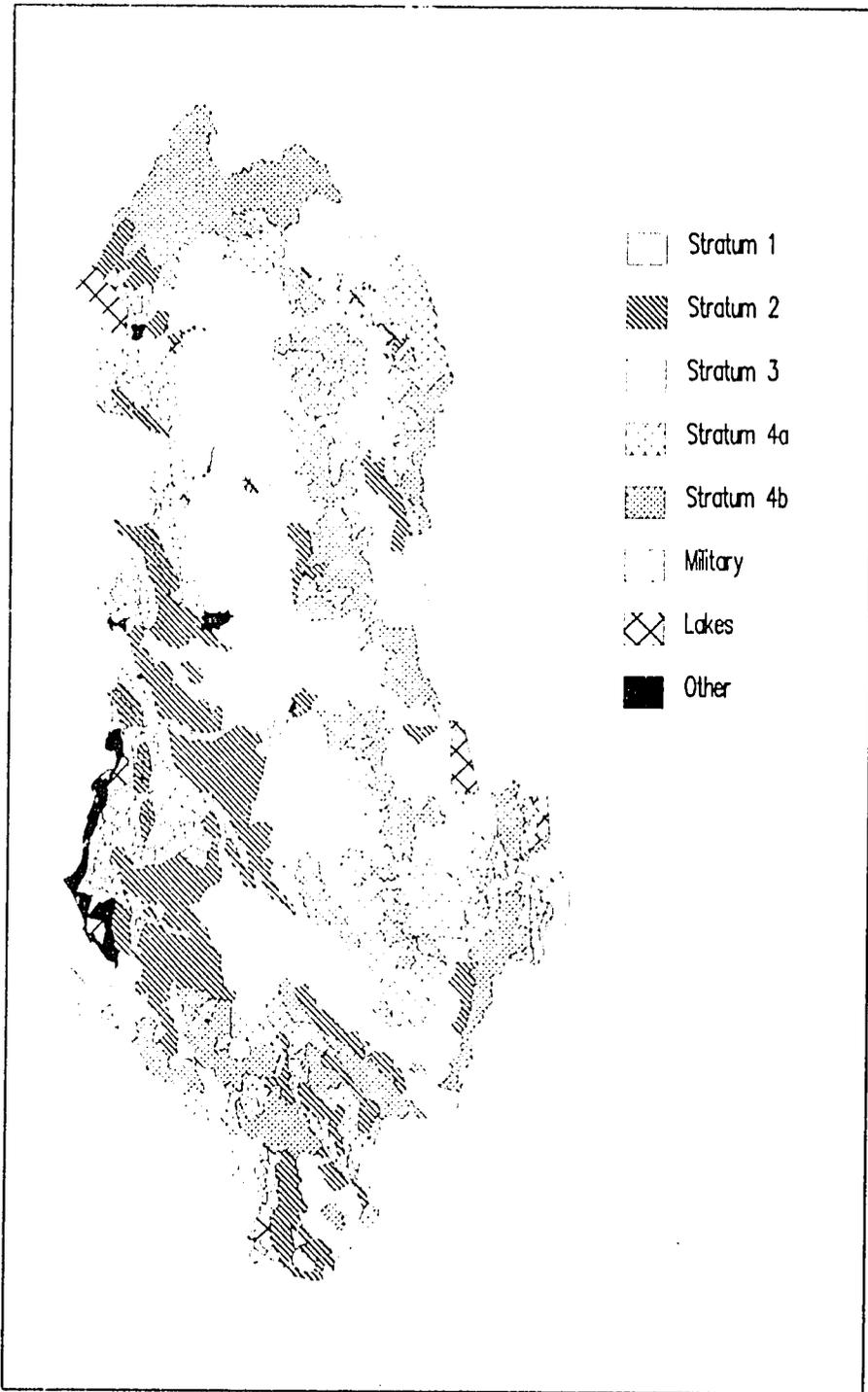


FIGURE 2

SHPERNDARJA e NJESIVE te SPERFAQEVE MOSTER ne ZONAT e VEZHGMT BUQESOR

PRIMARY SAMPLING UNITS of AGRICULTURE SURVEY STRATA

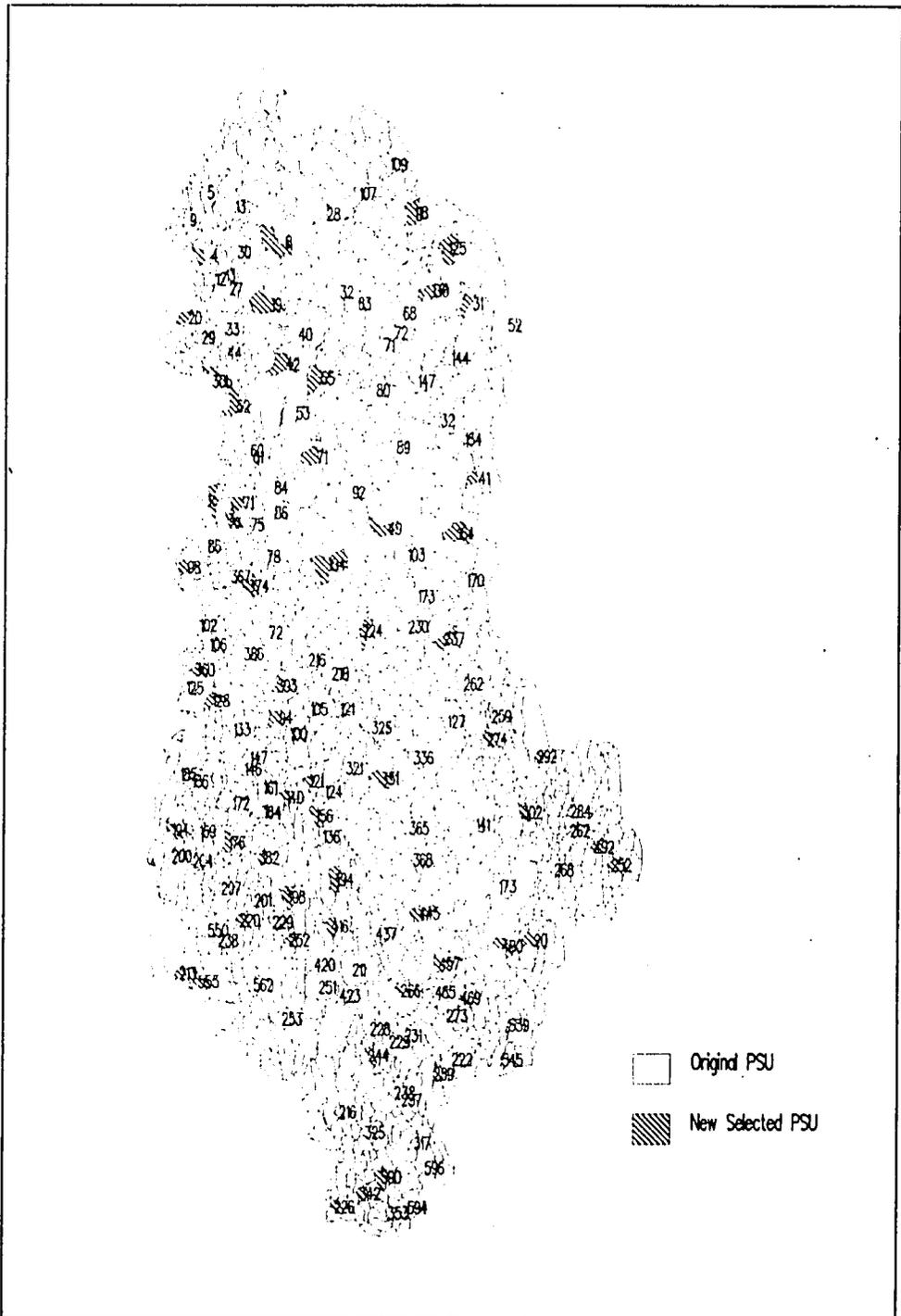


FIGURE 3

NJESITE MOSTER te ZGJEDHURA per VEZHGMN KOMBETAR SOCIALEKONOMIK  
SELECTED SAMPLING UNIT for NATIONAL SOCIOECONOMIC SURVEY

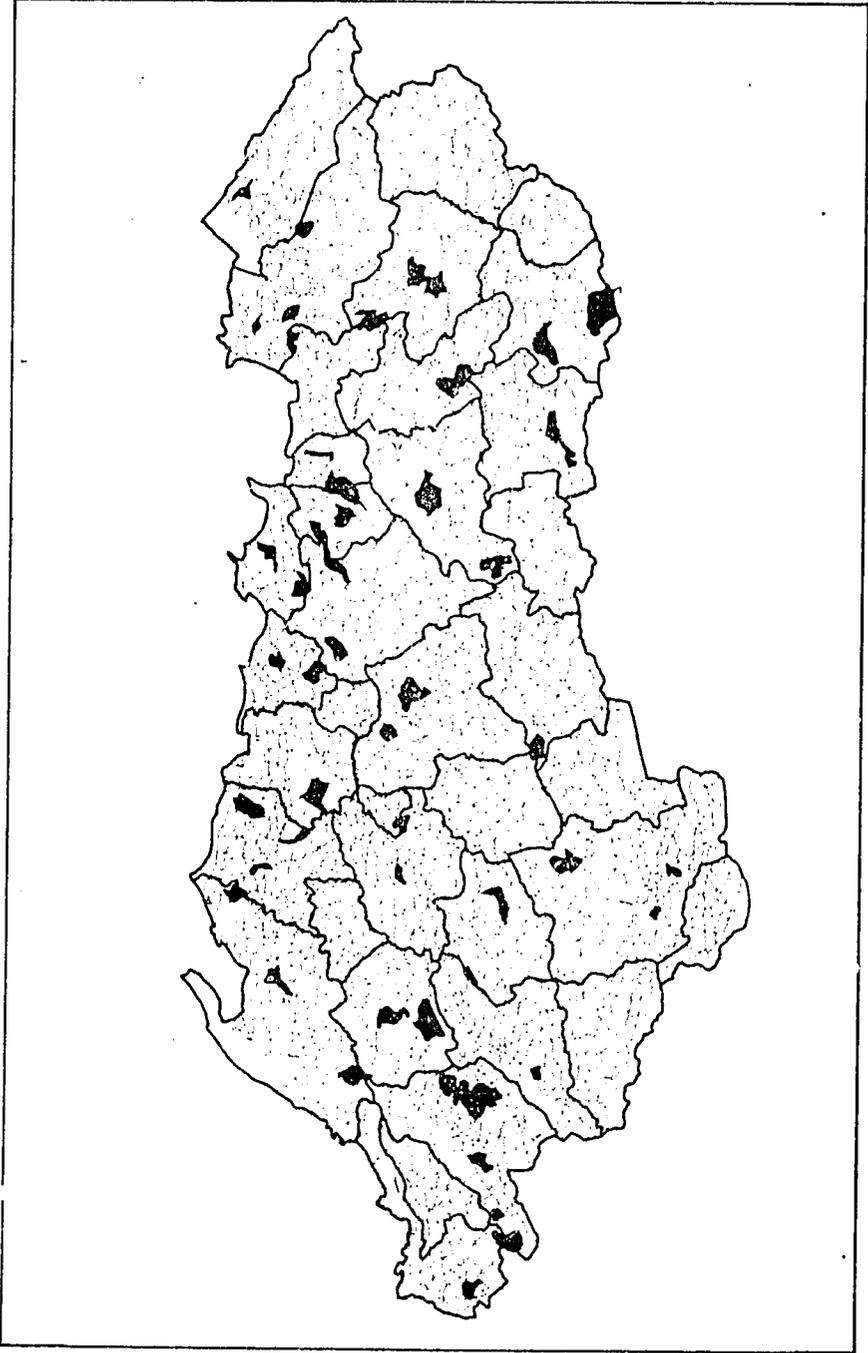
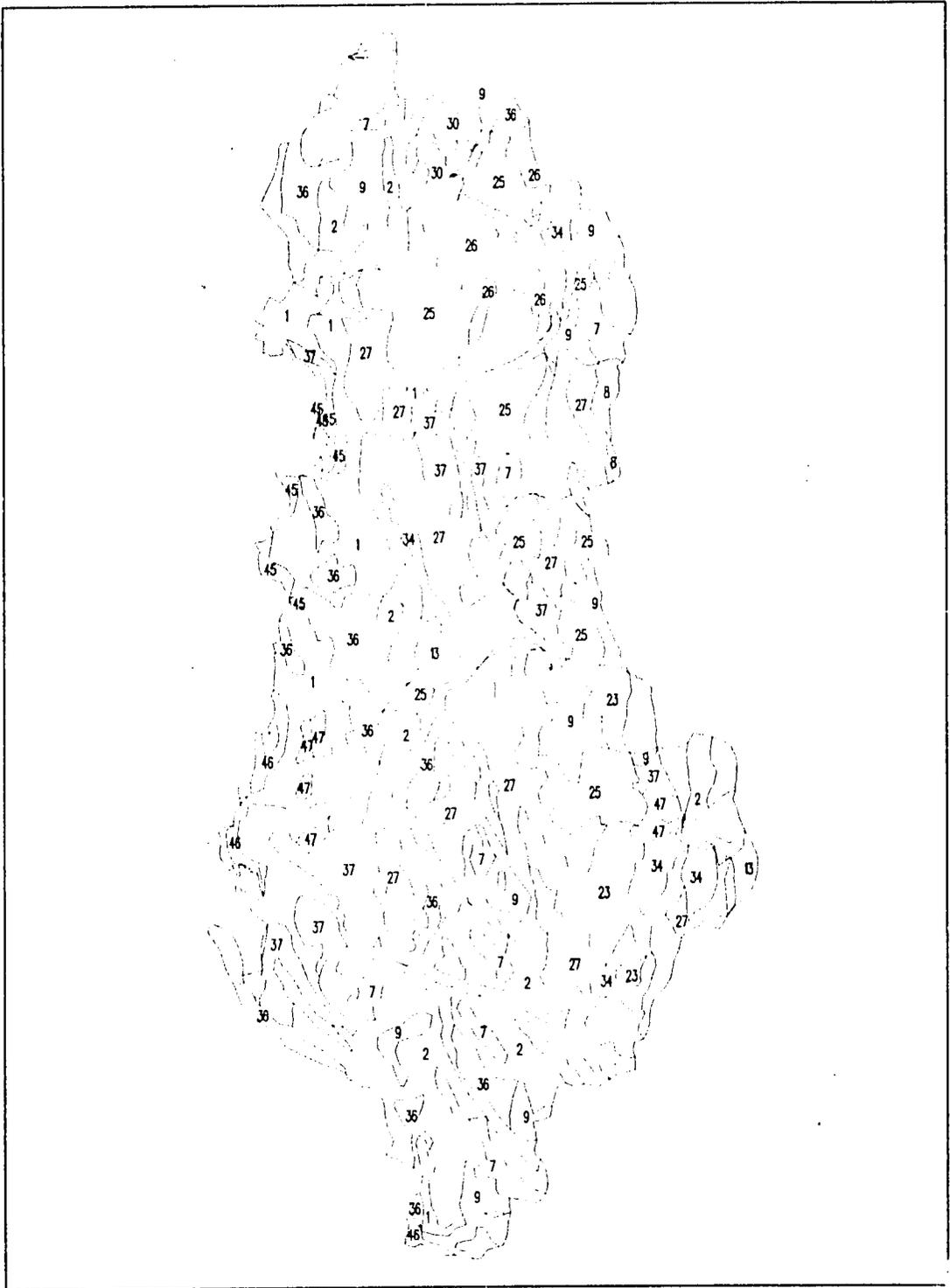


FIGURE 4

KARAKTERISTIKAT E TOKES ne SIPERFAQET BUJQESORE te SHQIPERISE  
SOIL CHARACTERISTICS of ALBANIA AGRICULTURAL AREAS



See appendix for soil description

FIGURE 5

**SOIL MAP legend used in figure 5**  
**DESCRIPTION LEGEND**

<b>FLUVISOLS (Alluvial Soils)</b>	1 Gley Alluvial Soils 2 Gleyic Grey Alluvial Soils 3 Gleyic Alluvial Soils
<b>GLEYSOLS</b>	4 Gley Soils 5 Subhydric Soils
<b>REGOSOLS (Autochthonous Soils)</b>	6 Regosols
<b>LITHOSOLS</b>	7 Limestone Lithosols
<b>RANKERS</b>	8 Rankers
<b>RENDZINAS</b>	9 Limestone Rendzinas 10 Dolomitic Rendzinas 11 Gravel Rendzinas 12 Rendzinas with Terra fusca 13 Mari Rendzinas
<b>CHERNOZEMS</b>	14 Loess Chernozems 15 Degraded Chernozems 16 Degraded Sandy Loess Chernozems 17 Chernozemlike Soils (type "Prater-terrace") 18 Chernozems with high clay content
<b>KASTANOZEMS</b>	19 Chestnut Soils
<b>GREYZEMS</b>	20 Grey Forest Soils
<b>PHAOZEMS (Meadow Chernozems)</b>	21 Meadow Chernozems 22 Meadow Chernozems with alkalization
<b>VERTISOLS</b>	23 Vertisols, partly Smonitzas
<b>CAMBISOLS (Brownearths)</b>	24 Brownearths on loess and loesslike sediments 25 Brownearths on weathered solid rocks 26 Brownearths with Rankers 27 Brownearths on flysch 28 Brownearths on terrace-gravels and alluvium 29 Gleyic Brownearths on Tertiary sediments 30 Brownearths on volcanic tuffs, partly Andosols 31 Brownearths of solid rocks, partly Regosols 32 Brownearths weakly podzolized
<b>ARENOSOLS</b>	33 Arenosols, partly Sandy Brownearths
<b>LUVISOLS</b>	34 Grey-Brown Podzolic Soils 35 Terra rossa 36 Brown and Red Mediterranean Soils (relict soils) 37 Cinnamonic Soils 38 Gleyic Grey-Brown Podzolic Soils
<b>PSEUDOGLEYS</b>	39 Pseudogleys
<b>PLANOSOLS</b>	40 Stagnogleys
<b>PODZOLIC SOILS</b>	41 Podzols 42 Podzolized Brown Forest Soils 43 Podzolized Brown Forest Soils on gravels
<b>ACRISOLS</b>	44 Acrisols
<b>HALOMORPHIC SOILS</b>	45 Solonetz 46 Solonchaks
<b>HISTOSOLS (Fenny Soils)</b>	47 Low Moors 48 High Moors

SHPERNDARJA VJETORE e RRESHJEVE ne ZONAT BUJQESORE  
 ANNUAL RAINFALL DISTRIBUTION in AGRICULTURAL AREAS

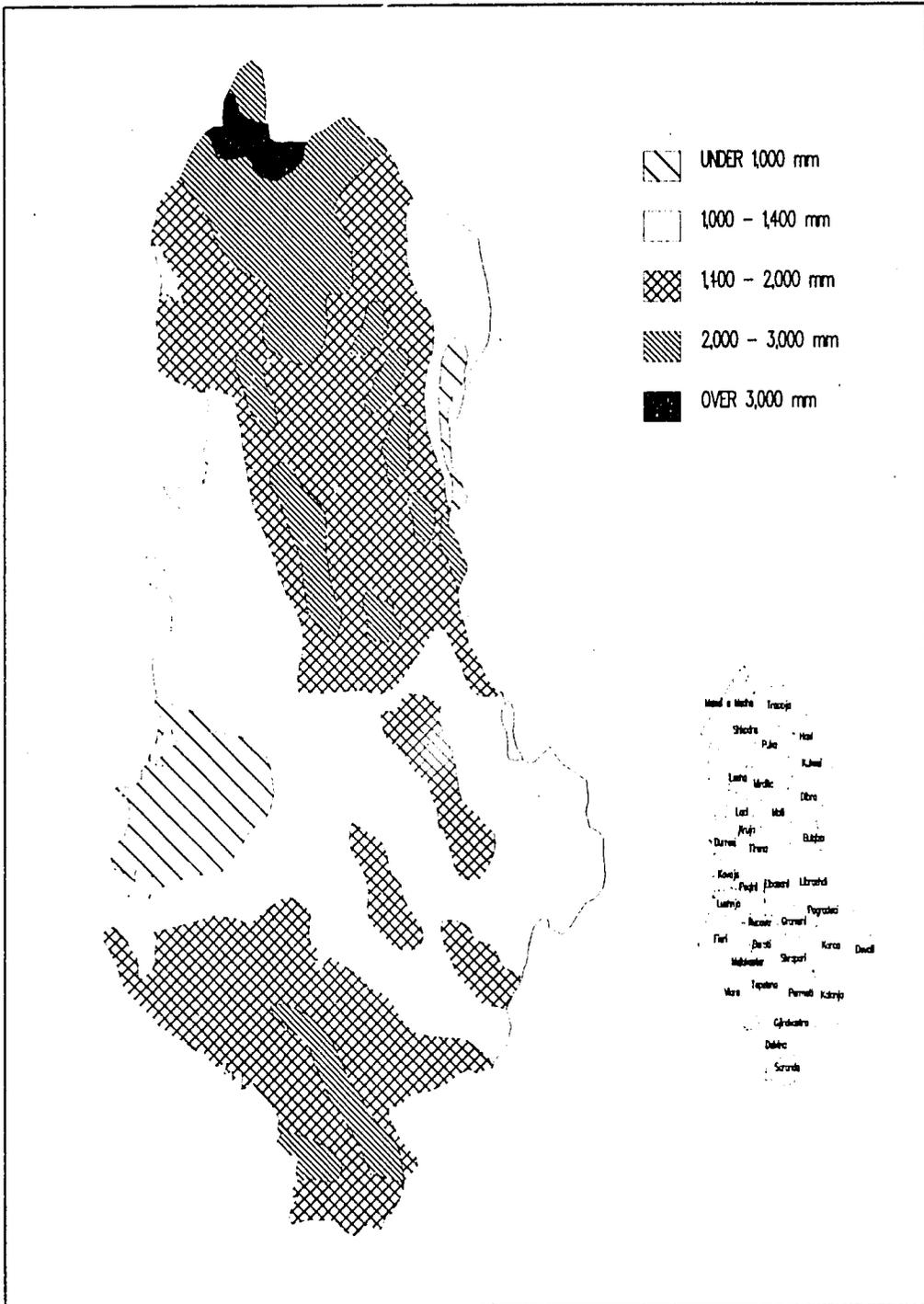


FIGURE 6





Figure 9. General structure of the survey questionnaire for the socioeconomic survey

