



SOCIO-ECONOMIC AND RESOURCE PROFILE ANALYSIS OF AINLATUNGA STUDY VILLAGE

(An Outcome of VDSA Project)

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Directorate of Water Management
(Indian Council of Agricultural Research)
Bhubaneswar-751 023, Odisha

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Ainlatunga Village: An Overview

Ainlatunga village is located in Tamian *gram panchayat* in Balangir district of Odisha. The village is located at 20° 48' 51" N and 83° 12' 56" E on the bank of Suktel river. It is surrounded by Ghasiyan village in west, Bagbhale in south, Phatamunda in north and Bharat Bhal in east. The distance of the village from block headquarter, Patnagarh is 20 km. Villagers sustain their livelihood without fertile lands, in adequate rainfall, and underdeveloped resources. However, they lead a life with dignity and self-sufficiency due to their glorious past, their time-tested culture and thirst for life.

Village Ainlatunga is inhabited by 1197 people under 307 households. Almost 42 per cent households are of labours, who depend mostly on others for their livelihood. Average family size is 3.90, and families are male-dominated; the education status of the village is poor. Most of the people in the village belong to *Haldia Teli* (Sahoo), which is considered as other Backward Castes (OBCs). Women are active and participate in outdoor activities, other than the daily chores. They collect non-timber forest products such as *Kendu* leaf and *Mahua* flower and contribute substantially to their households' income.

Rainfed agriculture is followed in the village. Paddy is the major kharif crop, while black gram, green gram are the main *Rabi* crops. Jagabalia Watershed Association is very active and working with peoples' participation, recognized recently by Government of India for the rain water harvesting and artificial ground water recharge. The water table over the last decades improved substantially and farmers are diversifying their income through vegetable production. This motivates the people to a great extent. Livestock rearing is an alternative livelihood option in the village.

Almost 76 per cent of the population meet their livelihood from agricultural sector and 21.07 per cent are non-farm workers in the village. About 80 per cent of households are cultivators. About 75 per cent of landless households are workers, out of which 14.95 per cent are agricultural workers and 56 per cent are non-farm workers. It is hard to find any households having government employment. Only 1.25 per cent of total population belong to this group.

Community Health Centre, Anganwadi Kendra and *ASHA* workers major social institutions. Awareness of basic amenities like health, education and agri-based knowledge getting preferences. Inadequate local market for agri-produces, transportation, storage and credit facilities are the issues, need to be addressed.

1. Introduction

A mega Project on **Tracking Change in Rural Poverty in Households and Village Economies in South Asia** is being undertaken by National Centre for Agricultural Economies and Policy Research (NCAP), New Delhi and International Crops Research Institute for Semi-Arid Tropics (ICRISAT), Hyderabad. For Eastern India, Directorate of Water Management Bhubaneswar is the implementing agency of the project in Odisha villages. The Project aims at understanding the dynamic process for reducing poverty in the poverty-laden agro-ecologies of Eastern India by tracking the households and village economies continuously. The Eastern region of India is one of the most poverty-laden regions in terms of both prevalence rates and total numbers. Reducing poverty in Eastern India has been a big challenge and the successful implementation of this project is expected to contribute to our understanding of the complex poverty dynamism in the region

The overall objective of the Project is to help evolve appropriate and effective strategies for accelerated reduction of poverty in Eastern India. Specific objectives of the project are:

- To enhance the availability of reliable household, individual and field-specific high frequency time series data in selected villages, and to address dynamics of economic, social, and institutional development at meso-level (e.g. district level), and
- To nurture policy analysis and strengthen capacity building for poverty reduction in the Eastern Region of India.

Collection of longitudinal data on households, individuals and field levels in selected villages is one of the major activities. Twelve villages have been selected for continuously tracking the changes in rural economies under the Project. The village Ainlatunga of Balangir district of Odisha is one of the selected villages. Before selection of sample households for continuous monitoring, the village census has been conducted in each selected village to understand the general and the socio-economic profile of the village.

This village profile is based on the village census carried out and qualitative information gathered by the project team.

2. The District Balangir

2.1. History

In the 1880's. Balaram Deo, the 12th king of Patna, established Balangir. The town of Balangir was used as the headquarters of the feudal state. It is said that the town being founded by Balaram Deo was named after him as Balaramgarh, from which the present name Balangir has been derived. There is, however, no recorded evidence is available to support this theory. The district of Balangir is flanked in the north-west by the Gandhamardan hill, and in the north-east traverses of it. It is the land of *Tantrik* culture. It is also notable for having experimented in the republican Ramai Deo. Ramai founded the kingdom of Patna in the 14th century, which within a short span of his military career becomes the head of the cluster of eighteen Garhs. The Chauhan rule ended with the merger of the state of Patna and Sonepur with Odisha on 1st January, 1948. The district was formed on 1st of November, 1949. Sonepur was carved out as a separate district on 1st of April, 1993. Sonepur was previously a sub-division of Balangir district.

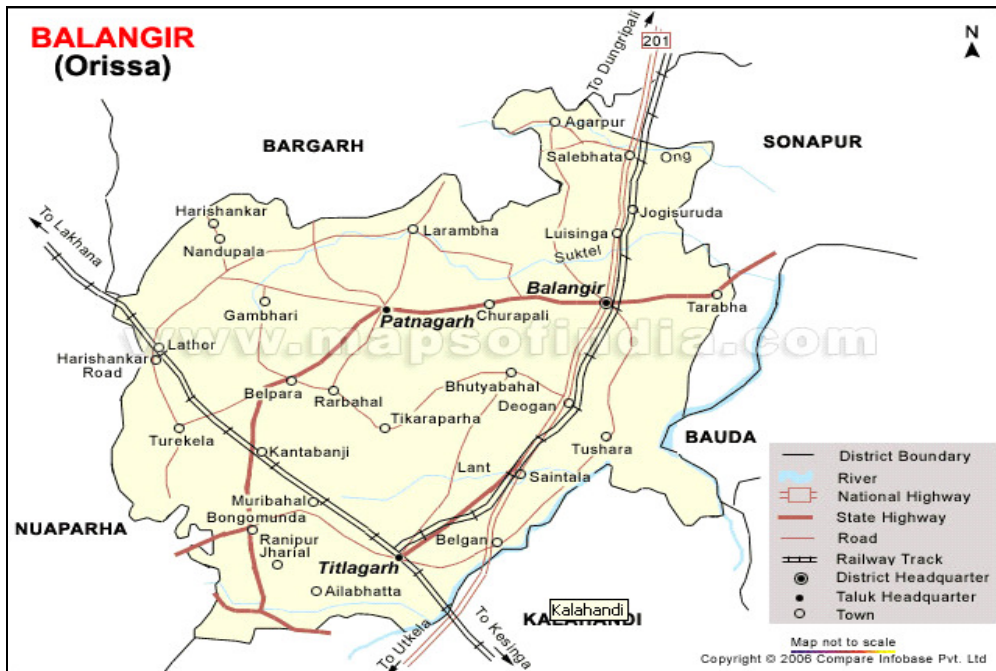


Fig. 1: Map showing blocks of Balangir district.

2.2. Location

The district of Balangir is flanked in the north-west by the Gandhamardhan Hills, a name of Ramayana fame, while the north-east by the rock infested Mahanadi. The district is bounded by Sonepur in the east, Nuapara in the west, Kalahandi in the south and Bargarh in the north. The district of Balangir is named after the headquarter town of Balangir which lies between 20°11'40"-21°05'08" North Latitude and 82°41'15" and 83°40'22" East Longitude. The district is situated in the valley of rivers like Ang & Tel. The important tributaries of Tel are Lanth, Sonegarh and Suktel. It is the nature's cradle for tribes like *Kutia*, *Khonds*, *Binjhals* and *Gands*. The district is famous through centuries for the *Bhulias* and *Kastias*, master craftsman who work excellent motifs on cotton and Tassar fabrics.

2.3. Demographics Features

According to Census of India 2011, the population of Balangir district is 1,648,574 comprising 831,349 of male population and 817,225 of female population with a sex ratio of 983. The provisional data of census suggests a population density of 251 in 2011 compared to 203 of 2001. Total area under Balangir district is about 6,575 sq. km.

2.4. Special Characteristics

Balangir, the district of many charms, has its own appeal for the visitors who opt to relax in the lap of nature. A cool bath in the perennial stream, trickling down the flank of famous Harishankar Temple, the view of both Lord Hari and Shankar in one shrine; the sight of numerous temples dotting the rocky outcrop of Ranipur-Jharial and the scenic panorama of Patnagarh has no parallel in the state. Traditional hand-woven textiles and naive tribal life also allure ethnic tourists. A drive to any place of tourist interest in the district always calls for passing through a forest cover. All these together make the visit to Balangir a rewarding experience.

Agriculture is the main source of livelihood as it engages two-third of the district population. Paddy is the main crop cultivated in the district. Most of the areas are single cropping. Many people migrate to cities like Hyderabad and Raipur for work. Around 50 per cent of the women involve in agro-based activity. Substantial percentage of rural women supplements the household income through Non-Timbers Forest Produce (NTFP) like *Kendu* leaf, *Mahua*, Broom and collection of various forest products. Since last few years, a number

of Self Help Group (SHG) are activated by Govt. to supplement the livelihoods of rural women. Nearly 61.06 per cent of the rural families in the district are estimated to be living Below Poverty Line (BPL). It is observed that Balangir district ranks very low in terms of Human Development Index at 0.546; it occupied a position of 21 among 30 districts of Odisha. Its performance is relatively better in terms of Gender Development Index at 0.518 (Rank 16) and Infrastructure Development Index at 100.24 (Rank 15).

2.5. Climate and Rainfall

The climate of this district is generally hot and moist sub-humid and one of the most drought prone areas not only in the state but also in the country. Balangir receives an average annual rainfall of 118.8 cm which is around 30 per cent less than the average annual rainfall of the state. During the summer (April to June) the temperature remains at 45°C to 48°C. The Titilagarh subdivision is infamous for high temperature in Asia. The farming activities therefore suffer in a harsh climatic condition such as less rainfall and high temperature. Irrigation facilities of the district are inadequate in the absence of any major project.

2.6. Language

The main communicative language of Balangir district is *Kosli* or *Sambalpuri*. Hindi is also considered as language for communication. The languages English and Oriya are also used but mostly for official purpose. Being a part of Odisha, Oriya is used as medium of education in school. English is also used for higher education.

2.7. Biodiversity

The district is traversed by many hill streams and is interspersed with the evergreen woodlands, the shelter of Bison and Sambar. The main forest area stretches along the western boundary bordering the Nuapada and Kalahandi districts then turns to the east running parallel to the Gandhamardan range. This forest track is broken by occasional clearings and small settlements, but it mostly consists of thick vegetation in which bamboo of excellent quality grows. Sal, Sahaj, Piasal, Dhaura and Ebony form the principal timber. The crest of the range of Gandhamardan hills is fine plateau, some ten miles long, with an average height of 3000 feet. Most part of this district lies on the north-west bank of the river Tel, which forms the boundary between this district and the district of Kalahandi, Sonepur, Boudh and Kandhamal.

3. The Village Ainlatunga

3.1. History

As per the views of old people of the village, people started to live in the village around 1850 A.D. Villagers faced severe drought in the year 1940. In the year 1941 Late Jagannath Sahu brought sugar cane crusher to Ainlatunga. During 1950, village was surrounded by dense forest and most villagers depended upon agriculture as their main source of livelihood. In the year 1954, a primary school was established in Ainlatunga. Before that students were going to Tamian and nearby places for studying. In the year 1961 village was affected by severe chicken pox. In the year 1965, the villagers faced severe drought. First bore well came in the village in the year 1978 followed by electricity in the year 1979. During the decade of 1970s forest area started to decrease. In the year 1982 villagers faced severe flood. In the year 2001 and 2002, the villagers faced severe drought. Watershed development programme started in the village in the year 2002. Ainlatunga watershed development programme has been awarded best watershed for groundwater recharge and the Central Groundwater Board gave away National water award to the Watershed Association in 2009.

3.2. Location

Ainlatunga village is located in Tamian *gram panchayat* of Patnagrah block in Balangir district of Odisha. The village is on the river bank of Suktel and eastern side of Patnagarh Block. The GPS status is 20° 48' 51" N and 83° 12' 56" E and surrounded by village Ghasiyanin in west, Bagbhale in south, Phathamunda in north and Bharat Bhal in east. The distance from block headquarter Patnagarh is 21 km. Livelihood in this region without fertile lands, adequate rainfall, and well developed resources has become burden. In spite of these deficiencies, the people of Ainlatunga lead a life with dignity and self-sufficiency. The cause is being their glorious past, their time-tested culture and thirst for life.

3.3. Road Connectivity

The village Ainlatunga had good road connectivity with nearby villages and towns.

3.4. Significant Events in History of Ainlatunga

A chronological list of significant events (Table 1) indicates the general development pathways of the Ainlatunga village.

Table 1: Significant Events in History of Ainlatunga Village

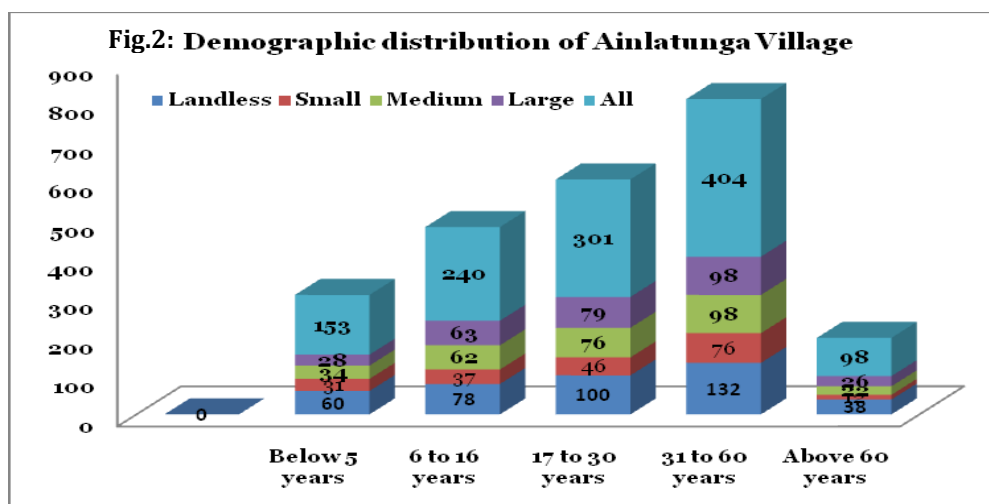
| Year | Event |
|-------------|---|
| 1880 | Village was established |
| 1940 | Drought occurred |
| 1941 | Sugar cane crusher came |
| 1950 | Village was covered by forest |
| 1954 | Primary school established |
| 1961 | Small-pox breakout |
| 1965 | First pump set was used |
| 1975 | Large number of livestock died due to disease |
| 1978 | First bore well became operational |
| 1982 | Electricity came |
| 1982 | Severe flood occurred |
| 1985 | Village club was established |
| 1990 | Chemical fertilizer was used |
| 1994 | Rice haller was established |
| 2001-02 | Severe drought occurred |
| 2002 | Watershed project was started |
| 2005 | Villagers used mobile phone |
| 2006 | NREGS was started |
| 2007 | First tractor came |
| 2008 | <i>Gram Kalyani Samiti</i> was formed |
| 2009 | Watershed project was completed |
| 2010 | VDSA office established |
| 2010 | Concrete road was constructed |
| 2011 | Village got National Award for water conservation |

3.5. Demographic Structure

The village Ainlatunga is not having very dense population. The population of the village is 1197 and the number of households is 307. A large population of the village is poor and comes under landless category. Almost 42 per cent households come under this category and rest are more or less equally divided. The average family size is 3.90, having smallest size among landless (3.16). The average family size of large farmer is 4.98, who are largest among the category. Most of the families are male-dominated; the education status of village is poor. Irrespective of households' category, most of the people leave their education without completing primary level. The average years of education is 2.76 and 4.06 for landless and large farmers, respectively.

Table 2: General characteristics of households in the Ainlatunga village

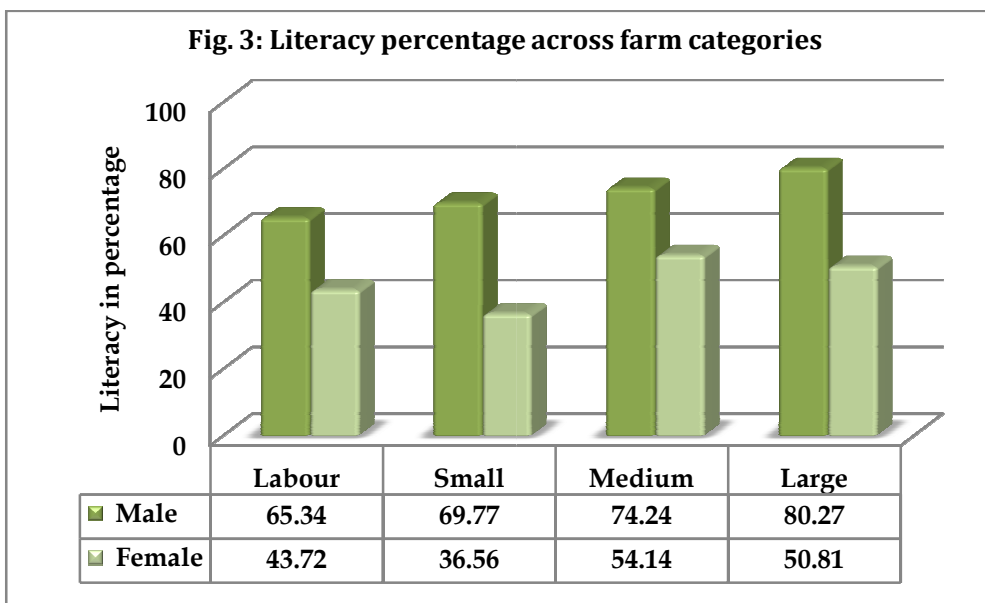
| Particulars | Households | | | | |
|----------------------------|------------|-------|--------|-------|-------|
| | Labour | Small | Medium | Large | All |
| Population | 408 | 202 | 292 | 294 | 1196 |
| Male | 202 | 99 | 145 | 159 | 605 |
| Female | 206 | 103 | 147 | 135 | 591 |
| Number of households | 129 | 53 | 66 | 59 | 307 |
| Age (years) | 28.96 | 28.50 | 29.48 | 30.49 | 29.38 |
| Education (years) | 2.76 | 2.45 | 3.48 | 4.06 | 3.20 |
| Family size (No.) | 3.16 | 3.81 | 4.42 | 4.98 | 3.90 |
| Male-headed households (%) | 90.76 | 98.11 | 95.45 | 96.61 | 94.28 |
| Sex ratio (per 1000 male) | 1020 | 1040 | 1014 | 849 | 977 |



There are two broad age groups; 17-30 and 30-60 years are considered as earning age groups and remaining category as dependent group in the village population. About 59 per cent population are under earning age group; the rest 41 are the dependent. A large population of earning group may be instrumental for economical upliftment of the village. About, 50.21% villagers are landless and small farmer, having average land size of 0.11 and 1.14 acre, respectively. Remaining farmers are of medium and large households, having average size of land holding of 2.44 and 6.87 acre respectively. Half of the population of the earning age group has no land or little land. So we can state that poor land distribution is one of the main causes of poverty in the village

3.6. Status of Education

The overall literacy rate recorded in the village is 60 per cent. Literacy was better (67%) in large farmer households in comparison to smaller holdings. Level of education increases with increasing holding size . It increases from 52.51 % for small farmer category to 64.15% for medium holdings to 66.79% for large farmers. Female literacy across the categories is very poor ranging from 44 to 51 per cent. A large gap was noticed between male and female literacy and gap was relatively larger among large farmer households indicating gender inequality in education even within the large holdings, (Fig. 3).



3.7. Social Structure

The total population of Ainalatuga is 1196, out of which 605 are male and 591 are female. The sex ratio is 977 female per 1000 male. Across category, except large farmers sex ratio swings in favour of females, i.e.1020, 1040 and 1014, respectively, where large farmer was only 849. Sex ratio is much improved among 0-16 age group for the same category. Though, as per the trend about 90 per cent of households are male-dominated Equal participation reported in decision making by male and female in this village.

3.8. Community and Caste Structure

The villagers follow Hinduism and majority of the people are under Other Backward Caste category. About 65.15 per cent total population come under this group followed by Schedule Caste (SCs). KBK (Kalahandi, Balangir and Koraput) region, worst poverty drought prone affected area in Odisha, is considered as high mass tribal population belt but in village tribal population is only 8.79 per cent. Forward caste, dominated social group represents only 6 per cent of the population.

In Ailatunga, people of different castes live with mutual understanding and fraternity. Castes like *Haladia Teli* (Sahoo), *Gouda* (*Adaboria*), *Harijan* (*Bag*), petty sellers (*Sundhi*), gardener (*Mali*) and Brahmin (*Poojaka*), potter (*Rana*), barber (*Pasayat*) are found in the village. Among them 70 per cent of people are *Haldia Telis*. Though system has opened up in present context and due to the non-availability of subsistence wage for traditional work, people are discouraged from the caste occupation but still the caste-based occupation is one of the sustainable source of livelihood in the village (Table 3).

Table 3: Distribution of households by social group

| Social Group | Households (%) | | | | |
|-----------------------|----------------|-------|--------|-------|-------|
| | Landless | Small | Medium | Large | All |
| Scheduled Castes | 20.16 | 16.98 | 21.21 | 22.03 | 20.20 |
| Scheduled Tribes | 6.98 | 11.32 | 13.64 | 5.08 | 8.79 |
| Forward Castes | 3.88 | 0.00 | 9.09 | 11.86 | 5.86 |
| Other Backward Castes | 68.99 | 71.70 | 56.06 | 61.02 | 65.15 |

3.9. Culture

The socio-cultural fabric of Ainlatunga is largely influenced by *adivasi* (primitive) culture as similar to the other villages of Bolangir. During festivals, the worships and rituals are performed in front of Lord Siva, Hari and Goddess Durga. The villagers perform spirited dance like *Danda*, *Ghoomra*, *Dalkhai* and *Keisabadi* in different festivals as it is a source of motivation and consolidation for them. Several festivals are observed on different occasions. *Nuakhai* is observed in the month of *Bhadra Pada* (August-September) by offering new paddy of year ripens to village God and Goddess. After few days *Karma* is observed (September-October) with ritual dance offering in praise of Lord Karmasani. The *Puojintia* and the *Bhaijuntia* are the festivals observed by mothers and sisters of the family by fasting whole day and night, with wishing the happy and prosperity of sons, daughters, brothers, sisters as well as for the well- being of distress.



Fig. 4: Caste, Occupation and Livelihood: An unique social matrix in the village



3.10. Migration

In Ainlatunga, almost 81.82 percent villagers are migrants in search of daily wage employment, followed by salaries job (13.64%) and for education purpose (4.55%). Insufficient employment opportunities in agricultural sector due to regular drought situation and absence of irrigation facilities in spite the watershed development accelerate the trend. Lack of generation of employment, advance payments from the labour contractors to work in unknown land are the other major causes of migration (Table 4).

Table 4: Incidence of migration in Ainlatunga

| Particulars | Households (%) | | | | |
|---------------------------------------|----------------|-------|--------|-------|-------|
| | Landless | Small | Medium | Large | All |
| Out-migration | 1.72 | 0.99 | 2.40 | 2.04 | 1.84 |
| Purpose of living outside the village | | | | | |
| Education | 0.00 | 50.00 | 0.00 | 0.00 | 4.55 |
| Salaried job | 0.00 | 50.00 | 14.29 | 16.67 | 13.64 |
| Daily wage employment | 100.00 | 0.00 | 85.71 | 83.33 | 81.82 |



Fig. 6: Field Investigator interacting the household family

4. Agriculture

4.1. Landholding and Land-Use Pattern

The village has a geographical area amounting to 758.62 hectare as per the available revenue records. Agricultural land classified into three broad categories based on water availability for crop production. First is the *ATT Land*, High land, which is unbunded upland, drought-prone, rain-fed and infertile area, where villagers cultivate cotton, green gram, and black gram in these plots. Second, the *Berna* land, is medium or banded upland and terraced to catch run-off water. These are the mid-low lands with average fertility. The third one is the *Bahal* lands (low land), which is low lying and comparatively fertile land. *Berna* and *Bahal* plots are used to cultivate paddy and other vegetables crops in the village.

Table 5: Average size of landholding across farm households (in Acre)

| Particulars | Households | | | | |
|-----------------------------|------------|-------|--------|-------|-------|
| | Labour | Small | Medium | Large | All |
| Size of land holding (acre) | 0.11 | 1.14 | 2.44 | 6.87 | 2.09 |
| Operated land (acre) | 0.06 | 1.01 | 2.41 | 5.64 | 1.80 |
| Irrigated area (%) | 29.64 | 42.68 | 20.76 | 27.17 | 27.08 |
| Permanent Fallows (%) | 0.00 | 0.00 | 1.24 | 17.94 | 11.66 |



Fig. 7: Cotton crop cultivation in the village upland.

Area wise classification is as follows:

- High land (ATT): 342.26 hectare
- Middle land (*Betna*) : 171.62 hectare
- Low land (*Bahal*): 244.74 hectare

The overall average size of land holding per households 2.09 acre in the village. Across the categories, this ranges from 0.11 in landless farmer households to 6.87 acre in large farmer households. Positive aspects of this village is that landless and small farmer households have no fallow land as high percentage of area is irrigable in comparison to medium and large farmer households. The fallow land is highest recorded (17.94%) in large farmer households; the gap between size of land and operated land due to the absence of the irrigation facility for cultivation. The disparity in land ownership can be shown in the graph and Lorenz curve (Fig. 8).

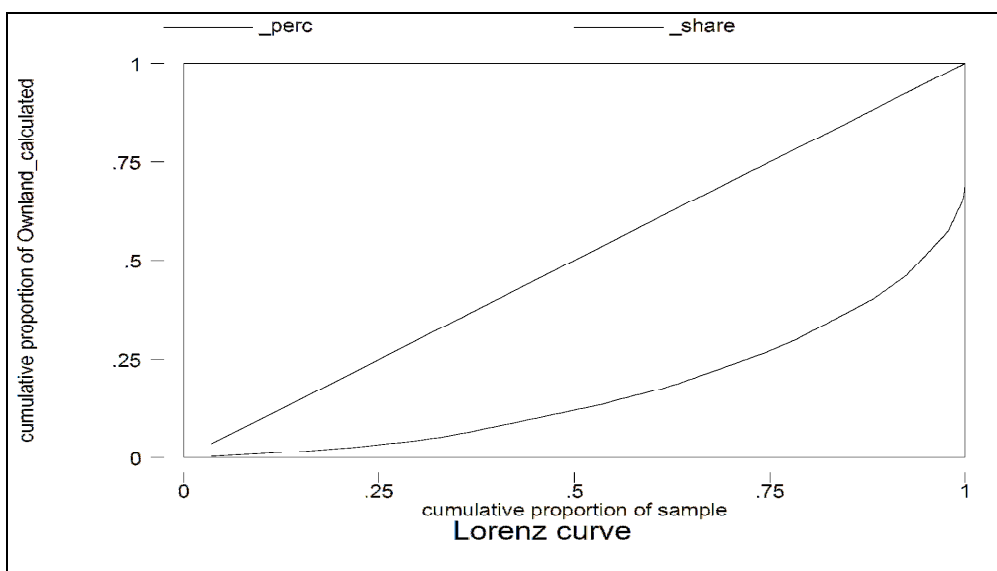


Fig. 8: Lorenz curve of own land in Ainlatunga study village

Table 6: Incidence of tenancy in Ainlatunga village

| Particulars | Households (%) | | | | |
|---------------------------------------|----------------|-------|--------|-------|------|
| | Labour | Small | Medium | Large | All |
| Percentage of households leasing land | | | | | |
| Leased-in | 3.10 | 0.00 | 0.00 | 0.00 | 1.30 |
| Leased-out | 3.88 | 1.89 | 0.00 | 0.00 | 1.95 |
| Share in operated land | | | | | |
| Leased-in | 38.27 | 0.00 | 0.00 | 0.00 | 0.56 |
| Leased-out | 111.11 | 13.10 | 0.00 | 0.00 | 2.89 |

4.2. Soil and Irrigation

Mostly two types of soil, i.e., sandy loam soil and red soil, are found in the village. Soil erosion and water conservation are two typical opposite persistent problems for cultivation. The cultivated lands of the region are of distinct types. ATT, high lands are unbunded uplands which are rain-fed and infertile. The local people cultivate cottons in high land areas. Mid lands are bunded uplands and terraced to catch run-off water. *Berna* lands are medium or mid-low lands with average fertility. *Bahal* lands are low lands, which are low lying and comparatively fertile lands suitable for rice cultivation. Danger lands are located on hill slopes utilized for grazing animal and shifting cultivation.



Fig. 9 : Recognition of the people work at grass root level

Irrigation facilities in the village area were totally negligible till a few years ago. Thanks to the successful implementation of district watershed mission program in 2002-03, there is greater sense of security of irrigation among the villagers. The Jagabalia Watershed Association of village Ainlatunga achieved a distinct milestone. The watershed mission effort was recognized by National Water Award 2009 by Govt. of India. The No. 1 watershed was given cash prize of Rs. 10 lakhs for rain water harvesting and artificial ground water recharge with the people's mobilization and active participation of all stake holders. Field bunds are created in upland areas to reserve the rain water and dug injection pits to deposit the water.



Fig. 10: Ring well system for irrigation, reflect recharged village soil aquifers.

Before the implementation of the scheme, the ground water level at low land area is 18 to 20 ft, but now Ainlatunga is a village rich in ground water resource, where the ground water is available on 5 to 6 ft in low land area. The whole project is carried on under the supervision of District Water Mission of Bolangir through Additional Central Assistance (ACA) revised long term action plan.



Fig. 11: Traditional irrigation system in the village

4.3. Crops and Cropping Pattern

There are two seasons of crops cultivated in the village namely *Kharif* (July to October) and *Rabi* season (November to February). Most of the indigenous crop varieties have been replaced by new high yielding varieties (HYVs) and hybrids to raise the yield ceiling of crops. Thanks to the efforts made by Agriculture Department, *Krishi Vigyan Kendras* and Watershed Development Programs. Paddy, cotton, groundnut and runner beans are the crops cultivated in *Kharif* season. Paddy is considered as main crop as this covers some 70 per cent of land area. The success of the crop heavily depends upon rain water. The crops of the *Rabi* season are black gram, green gram, horse gram, sesame, leafy vegetables, cauliflower and radish. Black gram and green gram are cultivated in most of the cases during rabi season. For domestic consumption the villagers cultivate runner beans, horse gram and leafy vegetables. Few farmer households are selling these products in local *Hatas* (market) to maintain day-to-day expenses.

Table 7: Changing cropping pattern in Ainlatunga village

| Ref. Year | 1970 | 2010 | |
|--------------|--------------|---------------|---|
| Crop season | | <i>Kharif</i> | <i>Rabi</i> |
| Crops | Paddy | Paddy | Black gram, Green gram |
| | Sugarcane | Cotton | Horse gram, Sesame |
| | Ragi | Ground nut | Watermelon |
| | Minor millet | Runner bean | Leafy vegetable, Radish, Cauliflower |

Agricultural extension network is very poor in the village. Grassroots extension functionaries are otherwise engaged in *Panchayati Raj* Department. Inequality in land holdings, and engagement of agricultural labours in other wage employments during peak cropping periods have detrimental effect on crop production.

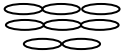
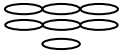
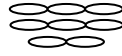
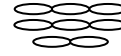
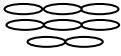
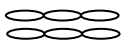
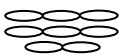
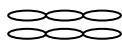
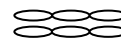

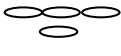
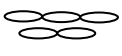
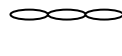

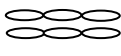
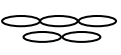
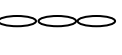
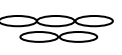
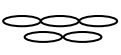

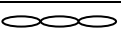
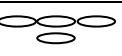
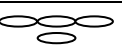
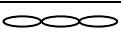
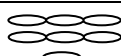


Fig. 12: Sesame crop and farm family.

4.4. Preferences for Crop Varieties

Paddy is the main crop cultivated in Ainlatunga covering around 70 per cent of cultivated land area. Farmer preference of paddy seed mainly depends upon crop yield and needs critical inputs like irrigation, fertilizer, crop duration, taste of produce. Swarna and Pooja are the most preferred varieties among the farmer households for cultivation as shown in the Table 8. Cotton hybrids like Tulsi, Gabbar, Bhaskar and Dhanu are arranged by the farmer households from neighboring states of Chhattisgarh and Andhra Pradesh via private traders.

Table 8: Seed variety preference of Ainlatunga farmer

| Paddy variety | More Yield | Less Irrigation | Less Fertilizer | Less Duration | Good Taste | Rank |
|---------------|--|--|--|--|---|--------|
| Swarna |  |  |  |  |  | First |
| Pooja |  |  |  |  |  | Second |
| 1010 |  |  |  |  |  | Third |
| jholi |  |  |  |  |  | Fifth |
| 1001 |  |  |  |  |  | Fourth |

Note : Symbols are only indicators of change and do not depict the extent of that change in real terms with time.

4.5. Livestock

Ainlatunga village is rich in livestock resources. Most of the livelihood options related to livestock rearing from cattle, buffalo to sheep, goat and the poultry, is available for the villagers. Cattle and goat are the most common and sizable in population across categories. Incidence of cattle rearing (46.36%) is much higher than their goats (20.55%). There are 255 cattle 113 goats, 74 poultries, 56 sheep and 52 buffaloes in the village. The average size of cattle is worked out to be 0.83 per households against 0.37 goats and 0.17 buffaloes in the village. Sheep and goats rearing are preferred only for meat purpose. Except cattle, the medium farmer households own a sizeable amount of sheep and goats, i.e., 0.65 and 0.47 respectively. So, selling of livestock in local market is an alternative livelihood option for medium farmer households (Tables 9 and 10).

Table 9: Average size of livestock holding in Ainlatunga (nos)

| Particulars | Landless | Small | Medium | Large | All |
|-------------|----------|-------|--------|-------|------|
| Cattle | 0.17 | 1.19 | 1.58 | 1.12 | 0.83 |
| Buffalo | 0.07 | 0.00 | 0.35 | 0.34 | 0.17 |
| Goat | 0.18 | 0.32 | 0.65 | 0.51 | 0.37 |
| Sheep | 0.06 | 0.04 | 0.47 | 0.25 | 0.18 |
| Poultry | 0.08 | 0.51 | 0.36 | 0.22 | 0.24 |

Table 10: Incidence of livestock rearing in Ainlatunaga village (%)

| Particulars | Landless | Small | Medium | Large | All |
|-------------|----------|-------|--------|-------|-------|
| Cattle | 34.21 | 54.29 | 48.08 | 45.83 | 46.36 |
| Buffalo | 11.84 | 0.00 | 8.85 | 13.89 | 9.45 |
| Goat | 30.26 | 11.43 | 20.00 | 20.83 | 20.55 |
| Sheep | 10.53 | 2.86 | 11.92 | 10.42 | 10.18 |
| Poultry | 13.16 | 31.43 | 11.15 | 9.03 | 13.45 |

The medium farmer households' category is one of the major groups for livestock rearing in terms of total livestock value species by holding Rs 14,383.33 worth of livestock followed by large farmer households keeping Rs 11,908.48 worth of livestock (Table 11).

Table 11: Share of livestock species in total livestock value in Ainlatunga (%)

| Particulars | Landless | Small | Medium | Large | All |
|-------------------|----------|---------|----------|----------|---------|
| Cattle | 64.19 | 94.21 | 79.91 | 72.79 | 78.86 |
| Buffalo | 21.75 | 0.00 | 11.26 | 18.65 | 12.39 |
| Goat | 10.66 | 4.81 | 4.91 | 5.81 | 5.82 |
| Sheep | 2.85 | 0.42 | 3.67 | 2.55 | 2.60 |
| Poultry | 0.53 | 0.56 | 0.25 | 0.21 | 0.34 |
| Total value (Rs.) | 2173.64 | 9066.04 | 14383.33 | 11908.47 | 7859.28 |

The disparity in the livestock distribution across the categories is clearly visible in Table 11. Both value and size of livestock held by the landless and small farmer households are in smaller percentage, even less sufficient to fulfill their

minimum livestock product requirements. It seems that it further widens the gap between haves and have not's across farm size categories (Table 12).

Table 12: Inequality measure of livestock in Ainlatunga

| Particulars | Households | Per capita |
|--------------------------|------------|------------|
| Coefficient of variation | 1.647160 | 1.746633 |
| Ginni coefficient | 0.710264 | 0.730767 |
| Thiel entropy measures | 1.035559 | 1.084623 |

4.6 Farm Machinery and Implements

The agricultural mechanisms in this village are still very primitive. Only few persons are having own irrigation motors and tractors. Tractor is affordable for few large households. This is why we find large percentage of agricultural workers in Ainlatuga. In terms of value, other traditional agriculture implements such as country plough, harrow, sparrow, sickle, wooden roller, and spear constitute a large portion. After the improvement of the ground water level, people bought some irrigation motors for lift irrigation purpose. In this village, harvester, thracer, bore well, sprinklers, drip type of irrigation facilities are not available. The machine value per household ranges from Rs. 2,883 in landless to Rs. 16,157 among large farmer households (Rs. 6,638 average per household).

Table 14: Percentage of households having farm machinery in Ainlatunga village

| Particulars | Households (%) | | | | |
|---------------------|----------------|---------|---------|----------|---------|
| | Landless | Small | Medium | Large | All |
| Tractor | 0.00 | 0.00 | 0.00 | 1.69 | 0.33 |
| Irrigation motor | 0.00 | 1.89 | 9.09 | 6.78 | 3.58 |
| Machine value (Rs.) | 2883.72 | 5430.19 | 6436.36 | 16157.63 | 6638.11 |



Fig.13: Rice haller in the village.

5. Economic Status

Villagers are divided based on economic status into Above Poverty Level (APL) and Below Poverty Level (BPL). Almost 62 per cent population comes under BPL category and the rest 38 per cent are APL category. Through PDS, the government is providing rice, kerosene and sugar for the BPL families. The BPLs avail 30 kg rice, 3 litre kerosene and 1.5 of sugar in each month, where the APLs can avail 7 kg of wheat and 25 kg of rice in each month (Table 14).

Table 14: Economic status of people in Ainlatunga

| Status of BPL | BPL families (Nos) | | | % of BPL |
|---------------|--------------------|--------|-------|----------|
| | Male | Female | Total | |
| | 364 | 353 | 717 | 61.86 |
| Status of APL | APL families (Nos) | | | % of APL |
| | Male | Female | Total | |
| | 224 | 218 | 442 | 38.13 |

According to the perception of the villagers based on Participatory Rural Appraisal (PRA), the households in Ainlatunga could be classified into different income classes as follows: (i) about 19.2 per cent of total households are in 'rich' or 'well-off' category, (ii) 21.5 per cent of households are in 'average' or 'medium' category, and (iii) 59.3 per cent of households are in 'poor' category. Thus, the majority of households in Ainlatunga village are 'poor' and only a small percentage is of 'rich' households.

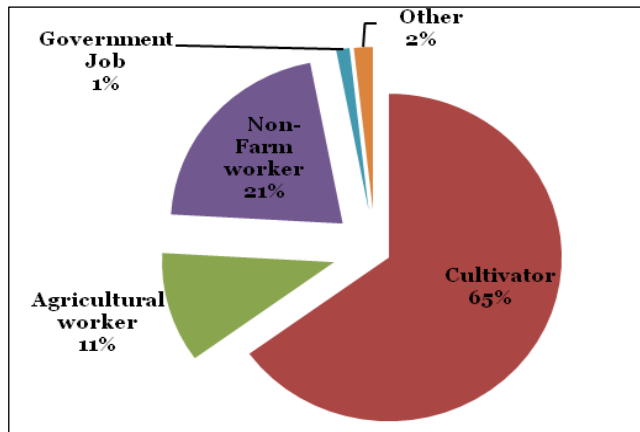


Fig. 14: Income diversification in Ainlatunga.

5.1. Sources of Income and Occupational Diversification

Almost 76 per cent of the population meets its livelihood from agricultural sector consisting of 65 per cent are cultivators and 10.89 per cent agricultural workers. Second sizable population (21.07%) is of non-farm workers in the

village. From the small, medium, and large farmer households, 80 per cent are cultivators as they hold sufficient land area to sustain. But 75 per cent of landless households are workers, out of which 14.95 per cent are agricultural workers and 56 per cent are non-farm workers. It is hard to find any households having government employment (Fig. 14).



Fig. 15: Non-farm activities in the village: Source of income and employment.

According to the people response under PRA activities of Ainlatunga village, the large farmer households of the village earn about 70 per cent of their income from non-agriculture, whereas they derive about 30 per cent of their income from agriculture. In the case of medium farmer households, it is 20 per cent from agriculture, 30 per cent from private and government jobs and the remaining 50 per cent from other sources. The landless farmer households earn maximum portion of their income working as labourers both on-farm and off-farm, which contributes about 90 per cent to their income, and the remaining 10 per cent is from performing agricultural activities in their fields, salaried jobs, etc.



Fig. 16: Off-farm avenues for income and sustenances.

5.2. Role of Women in Household's Economy

The role of women in households is not confined to day-to-day activities. The role is equally emphasized for betterment of economic status of households. The women in Ainlatunga formed various Self Help Groups (SHGs) to be self-reliant. SHGs like *Parambrahma*, *Maa Ghasian*, *Maa Patnasweri* are active for this purpose. After the *Rabi* crop season (December to March).





Fig. 17: Women behind sheep and goats.



Fig. 18: Role of women in agricultural to household activities.

The entire village women engage in collection of forest products such as *Mahua* flowers, *Char* seeds (*Chiranji*) and *Kendu* leaves. *Mahua* is highly useful for preparing local wines. These women sell these flowers in Tamian local market Rs.10/- to Rs. 15/- per kg. *Chara* is a seed of high medicinal property. The women collect *Kendu* leaves and gathers in a bucket, which is tendered by the government checkers in pre-quoted government price. A woman can earn Rs. 60/- to Rs. 80/- after 6 to 8 hours of labour.

6. Health Care and Sanitation

6.1 Drinking Water

There are eight tube wells installed in the village, out of which 7 are in running condition. Though the number of tube wells are more, the out flow of water is very less even after much physical effort in summer. For taking bath and other essentials, villagers use the nearby pond and Suktel river. In summer, the water level of the river also dries up and seems barren. Therefore, villagers collect water from local tube wells and functional well in summer.



Fig. 19: Natural source for cleaning and bathing.

6.2. Health Care

As the majority of births in Odisha still occur at home and 66 per cent of all deaths occur in the first month of life, it is essential to ensure that skilled health care provided to babies at birth. Here Community Health Centre, *Anganwadi Kendra* and ASHA are working sincerely to ensure skilled health care of babies.



Fig. 20: Activities of women in their best form in the village.

Ms Mamata Sahu is working at ASHA for Ainlatunga village. She is helping *Anganwadi* worker in weight checkup. Ms Sandhya Sahu is an *Anganwadi* worker. Ms Ratna Bhoi is working as an ANM for the village. She is doing-ante natal and post-natal checkup to pregnant women, conducting vaccination to children, providing iron and folic acid to ANM for distributing it to the pregnant women. She is conducting vaccination to village children on 2nd Tuesday of every month. There is a Primary Health Centre (PHC) situated in Tamian at a distance of 4 km. Most of the villagers are depending upon Tamian and Ghasian PHC for primary health care. For any serious health problem villagers are consulting Sub Divisional Hospital at Patnagarh and District Hospital, Bolangir. There is no recommended medical shop in the village. But the grocery shops are keeping medicines used for curing the common illness like cold, headache, back pain etc. The nearby medial shops are one at Tamian and at Ghasina. Both places are 4 km away from the village Ainlatunga.

6.3 Sanitation

Ainlatunga village got assistance from District Water and Sanitation Mission under Total Sanitation Campaign (TSC) for individual households latrines. But most of these latrines are not in use. Over 90 per cent people are going to near by pond and river for sanitation (Fig. 20).



Fig. 21: TSC in bad shape in the village

7. Market, Transport and Communication

7.1. Markets

Nearby local market is present at Tamian, 4 km away from the village. This is a weekly market on every Friday where farmer households are selling vegetables to these markets. Other nearby markets are in Phathamunda, 5 km from village (every Tuesday), Larambha (4.5 km from the village, every Saturday). Cattle are brought and sold in the market occurred Tamian on every Saturday. An OMFED pasteurized centre is at Ghasian. Though there is a Regulated Market Committee in Patnagarh, 17 km. away from village, people usually sell their crops to local private traders at reduced prices because of delay in cash payment mechanism. Marketable surplus of food grains are hardly seen with small and marginal farmer. Inadequate transport facilities, storage capacity, credit facilities, market information and farmer organization and agro processing have led to serious problem, resultant agriculture has not become remunerative and rewarding in most of the cases.



Fig. 22: Friday Vegetable market in Tamian (4 kms away from the village)

7.2. Transport

Under *Pradhan Mantry Gram Sadak Yojana* there is an all-weather road connected to block headquarter at Patnagarh. This was completed in February, 2011. In order to hire private passenger vehicle, one has to travel Tamian, 4 km

on earthen road. The nearest bus stand is at Patnagarh, which is about 17 km from Tamian. The nearest railway station is at Balangir, 61 km from the village.

7.3. Communication

The communication network in the village is very miserable. The condition is recently improved by the installment of 4 mobile networks at a distance of 4 to 10 km. Few people recently use mobile phones to keep in touch with relatives and friends. There is no landline telephone connection to this village. No post office is available at village. Nearby telephone connection and post office are at Tamian *gram panchayat*. Because of poor transportation facility no daily newspaper is available in time. One has to travel 4 km to Tamian to read Oriya newspaper such as *Sambad* and *Niyukti Khabar*. Only 15 television sets are available in the village. Most of the times, the people prefer to watch regional channels for entertainment. This facility is available to those who have private DTH antenna or Dish TV. Nearest financial institute is Central Bank of India at Tamian and one Cooperative Bank is at at Ghasian, both 4 km distance from the village. The nearest ATM counter is at Patnagarh Block headquarter. People travel a distance of 20 km in to avail this facility.

7.4. Electricity Supply

Electricity came to the village in the year 1979. It is used by few rich people only; initially there were power cuts for 4 to 5 hours in a day. Under Rajiv Gandhi Electrification Scheme all BPL households are provided electricity connection in the year 2010. Till now electricity has not been given to these households but installation of meter work is completed. In summer people face frequent power cuts for a prolonged period.



Fig. 23: Traditional earthen well system for modern cultivation.

8. Welfare and Development Programmes

Several welfare programmes of the central and state governments are in operation in Ainlatunga village. These include:

- *Aanganwadi*
- *Annapurna Antyodaya Yojna*
- Crop Production Programmes (for the development of horticulture)
- Cotton Development Programme
- Drought and Flood Relief Programme
- *Indira Awas Yojna*
- Mid Day Meal Scheme
- Mahatma Gandhi National Rural Employment Guarantee Scheme
- National Rural Health Mission
- National Water Shed Programme
- Old Age Pension
- Public Distribution System
- Pension for Physically Challenged Persons
- *Pradhan Mantri Gram Sadak Yojna*
- *Sarva Shiksha Abhiyan*
- Self Help Groups
- Widow Pension

9. Indicators of Development

Various Development infrastructures are available in the villages can be listed as follows in the village

Table 15 : Development Indicators in Ainlatunga village

| Particulars | Number |
|-----------------------------------|---------------|
| Primary School | : One |
| Upper Middle School | : No |
| Auxiliary Nurse Mid-Wife | : One |
| ASHAs (Medical Helpers) | : No |
| <i>Anganwadi</i> Centres | : One |
| Tractors | : Two |
| Bank | : One |
| Drinking Water Supply | : No |
| Electric Supply | : Erratic |
| Public Handpumps | : -- |
| Post Office | : No |
| Telephone Land Line | : No |
| Mobile Phone | : Yes |
| Agricultural Input Shop/Market | : No |
| Procurement Centre/PACS | : No |
| Farmer Households Club | : No |
| Library | : No |
| Public Distribution System | : No |
| Village agriculture worker office | : No |

10. Households Preference for Different Public Institutions

There are school, *Anganwadi Kendra* and community centre within the village and other needed facilities such as post office, hospital, police station, bank, PDS, panchayats are outside the village. Venn diagram represents respective public institution in the village locality. The number in the circle shows the villagers' need-based preference and length of arrow depicts the relative distance from the village (Fig. 23).



Fig. 24: Preference of households for different public institutions.

Note: The number in the circle shows the preferential ranking of that institution by the villagers, and length of arrow depicts the relative distance from village.

There is an upper primary school and *Anganwadi* Centre in village. Students are going to Ghasian, Tamian and other places for high school education and higher education. School for education, hospital for health, PDS for basics, bank for essential monetary needs and KVK for agri-based knowledge are the first five preferences for the villagers, shows their level of awareness.

The *Anganwadis* are Govt. sponsored child- and mother-care centres as part of Intensive Child Development Scheme (ICDS) to combat child hunger and malnutrition. They aim at improving the nutritional and health status of children in the age group of 0-6 years, reducing incidence of child mortality and school drop-outs, and enhancing the capability of mothers to look after normal health, primary education and nutritional needs of her children for proper growth and development. In Odisha, 66 per cent child death occurs in the first month itself, therefore, the role of the *Kendra* is most essential to ensure health care of the babies.






















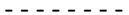
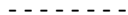
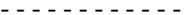














Fig. 25 : Anganwadi centre and child care activities in Ainlatunga.

10.1 Agriculture Dynamics and Farmer Households Economy in Ainlatunga Village

Participatory method of interaction was used to record farmer households perception in agricultural practices, tools, technology and dynamics over the period of time in the village. They generously responded on the agri-indicators like soil fertility, fertiliser use, crops grown, cropped area, ground water level, irrigation, migration, horticulture, livestock, diseases, forest and wildlife, etc. in seventies, nineties and 2010 in the village. Possible cause for the changed dynamics was also recorded based on farmer households' experiences and recalled memories have been documented and presented in Table 15.

Table 16: Agricultural biodiversity and Crop ecological dynamics during 1970-2010 in Ainaltunga

| Indicators | 1970 | 1990 | 2010 | Reasons |
|----------------------------------|---|---|---|---|
| Soil Fertility |  |  |  | Chemical intervention and less use of organic manure |
| Number of crops |  |  |  | More income in cash crops than traditional crops |
| Fertilizer use |  |  |  | Decreasing soil fertility |
| Area of cultivation (Per capita) |  |  |  | Increasing population |
| Horticulture |  |  |  | More vegetables production |
| Irrigation |  |  |  | Government and self initiative and increased awareness about water conservation |
| Migration |  |  |  | Lack of employment and education opportunities |
| Ground water level |  |  |  | Watershed development initiative |
| Livestock |  |  |  | Increased government initiative |
| Diseases |  |  |  | Lack of hygiene practices and lack of primary health centre |
| Forest |  |  |  | Cutting of forests and encroachment |
| Wild life |  |  |  | Decreasing forest |

Note: The symbols used in this table are only indicators of a change and do not depict the extent of change in real terms over time.

11. Opportunities and Constraints

11.1. Opportunities

- With increasing ground water level Ainaltunga has set an example for water conservation practices and got the best watershed award in 2011 by Govt. of India. The water availability and increased irrigation will pave the way for crop diversification. Increased vegetable production, with required government initiative towards creating transport and market facilities will help in the growth of the economy of the village.
- Market linkages, scope of crop diversification
- Road connectivity, abundant labour, low population growth.

11.2 Problem existing in the village

- Lack of participation of women in decision making
- Gender discrimination for education, as girls are not allowed to go out.
- Lack of property ownership to female
- Lack of awareness about the hygiene and sanitation practices
- Lack of healthcare infrastructure and personnel, even for PHC, 10 km away.
- Lack of reliable markets for agri-produce and vegetables, mediators benefitted
- Lack of good transport facility as poor conveyance and poor roads
- Lack of storage facility
- Lack of health care facility especially for females
- Inadequate drinking water facility
- Inadequate food processing facility in the village
- Lack of toilets
- Erratic electricity supply
- Difference in wage rate for female and males despite of working for same hours
- Irregular payment for NREGS work
- Irregular payment for old pensioners
- High alcohol consumption

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