Will we Exist or be Wiped Out?: An Anthropological Discourse on Livelihood Challenges and Vulnerabilites of Dongria Kondhs of Odisha

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Abstract

Livelihood studies emerge as the hallmark of social sciences, particularly in the domain of tribal who happen to be the most backward and marginalized (Sahoo, 2015). Livelihood is not only the way of earning a living but also the very means to live a life. However, in the process of earning a livelihood, a man comes across a number of livelihood challenges, both socio-cultural as well as environmental. In this context, the present study focuses upon the myriad livelihood challenges as faced by the *Dongria Kondhs*, a Particularly Vulnerable Tribal Group (PVTG), residing in the *Niyamgiri* hill ranges of the Eastern Ghats in the state of Odisha. The study throws light on the traditional ways of living and livelihood; the changes brought there in by different cultural and natural stimuli, causing serious hardships and the potential livelihood challenges like vulnerability to climate change as well. The current research, applying the human ecological approach,was carried out covering all aspects of the Dongrias with far reaching implications for further research and actions to be initiated by the concerned authorities.

Keywords: Livelihood challenges; Culture; Environment; Vulnerability; Dongria Kondh.

INTRODUCTION

A sper the Marxist view, feeding for self and the family is the fundamental aspect of the human existence followed by other socio political religious aspects. So for this, the humankind has to engage

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upon certain kinds of activities to feed the empty stomach, a necessary biological phenomenon. It is in accordance that the concept of livelihood comes to the picture which is not merely a means for the survival of a people and community but itself constitutes a part of that very culture. Livelihood is defined as "the means of gaining a living, including tangible assets, intangible assets, and livelihood capabilities including coping abilities, opportunities and sundry freedoms" (Chambers, 1995). Here, the tangibles indicate the visible, i.e., the material possessions while the intangibles represent the invisibles i.e., the socio-political facets of the life including the belief systems. Thus livelihood is not only the way of earning a living but also the very means to live a life.

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The Dongria Kondhs, a Particularly Vulnerable Tribal Troup (PVTG), reside on the hill tracts of the Niyamgiri ranges of the Eastern Ghats in the state of Odisha. They are one of the excellent shifting cultivators of the Indian sub-continent and are famous for their cultural attire which makes them distinguished from other tribal groups (Sahoo, 2015). Several Dongria villages (Khajuri, Radhanga, Gartali, Hutesi, Kurli etc.) were studied for collecting qualitative data like case histories and non-structured interviews. However census was carried out in the village *Khajuri* which is situated 3 km from the Bissam Cuttack railway station. It is a revenue village coming under the Block of Bissam Cuttack of Gunupur Sub-division, Rayagada Dist. The detailed population structure is given in Table No. 1 as per the data given by the Dongria Kondh Development Agency (DKDA).

Table 1: Population of village *Khajuri* in 2011 and 2015 (DKDA, 2015)

Year	Total ST Households	Male	Female	Total Population
2011	78	170	194	364
2015	84	185	208	393

METHODOLOGY USED

A detailed ethnography was collected with special emphasis on the economic organization and livelihood opportunities. First of all, myriad livelihood options as practiced traditionally were examined to show how the people found out the means of a living. 2nd, in the process of livelihood generation the hardships arising out of those practices were investigated employing the human ecology approach where all the facets of the lives and livelihoods of the Dongria Kondhs were throughly studied and linked to environment and other socio-cultural milieu. Moreover, it is pertinent here to note that as the research was carried out to highlight the vast aspects of livelihood challenges using participant observation, case histories, and non-structured interviews and focused group discussions, qualitative aspects were majorly emphasized. Accordingly quantitative data were given less priority.

Findings and Analysis

Though the *Dongrias* are found to adapt to the hilly areas both climatologically and socio-culturally, they are always in a constant confrontation vis-àvis the natural and the social environment due to the natural and man-made changes in ecological set up. The subsistence pattern of livelihood of *Dongrias* therefore, as examined, is further worsened by these unexpected changes in environment in an unprecedented manner. These difficulties or challenges become multi-directional and multi-dimensional such as challenges in agriculture and horticulture, food insecurity, vulnerability to climate change, life style challenges like extravagant spending on cultural occasions, burden of disease affecting out of pocket expenditure on diseases and its impact on livelihood options, migratory issues and so on. Let's examine the myriad challenges faced by the *Dongrias* one by one:

Challenges in shifting cultivation and horticulture

Dongrias are referred to as the gifted horticulturalist. They produce a large number of vegetables and fruits which are mainly meant for the market purposes. As horticulture is the prime means of food production as well as income generating option for the Dongrias, any deviation from this, either caused by anthropogenic or natural factors, would prove disastrous for them. In recent times they have been facing serious ecological and techno-economic hardships in the field of practicing horticulture. Some of the challenges are as follows:

1. Paucity of cultivable land:

Demographic facets emerge as one of the distinguished lead in the livelihood depletion. As the population increases the land holdings get fragmented. Resultantly, the average land holding size becomes contracted per household. If we take the population of the village Khajuri, we will find that the number of households has increased from 75 in 2011 to 84 in 2015. That means there has been division of cultivable lands. This in turn affects the productivity of the crops. For the cost invested in the field does not return the benefits. Therefore the cost benefit analysis proves to be a direct blow to the practice of horticulture. And this is the reason why *Dongria youths* are now not inclined to farming having massive socio-economic ramifications. The ultimate consequences will be that Dongrias are being more marginalized.

2. Shortage of labour:

While the youths show disinclination to horticulture, which they feel very tedious and least productive, they become interested to shift to other livelihood opportunities. On other hand, the older people, who are left behind, find it very difficult to carry on with the shifting cultivation, a labor intensive work. This also erodes away a major chunk of the profits of the yield. Even if the young generation is present in the village, they don't go to the *dongers*ⁱⁱ for cultivation. Rather *Dongria* men and women are seen to work on MGNREGAⁱⁱⁱ sites. Besides as per the *Dongria* customs, labor has to be a co-operative effort. That is, if a family contributes labor to a neighbor, the neighbor in turn has to contribute that in future. But as the youth are disheartened to join in the family practice, the household heads found it very hard to be in horticulture.

3. Scarcity of water:

As the impacts of climate change are gradually becoming a reality, there have been instances of shortage of water for the crops such as millets, pulses, vegetables etc. There has also been growing recognition among people that climate change not only affects their physical, geological and meteorological environments, but also has profound impacts on people and cultivation. This is also burdened by the massive deforestation and unscientific practice of shifting cultivation in recent times (mainly because of population pressure and climate change). The imbalance in the ecological framework and unavailability of proper micro and macro irrigation facilities render poor growth of plants. It affects the productivity which in turn severely hampers the earning capability of the *Dongrias* and thus becomes a livelihood challenge. The micro irrigation channels established by the Block and DKDA authorities only water the lower reaches of the hills. It cannot go beyond a 50 m. altitude, in the lands of nelu padi, places where the Dongrias actually cultivate their crops. People also find that the water content in the fruits and vegetables itself is gradually declining due to shortage of water in hill tops.

4. Loss of soil fertility and gradual desertification of the Donger

With increase of population, and fragmented land holdings, they try to harvest the yield as much as possible. The only way people can manage this is to shorten the fallow period so that they can harvest more to live a basic life. It is being found that, the area having *podu*^{iv} cycle of 3 and 5 years is more vulnerable to weed invasion compared to *podu* cycle of 15-20 years. Reduction in the cycles of *podu* adversely affected the recovery of soil fertility, and the nutrient recycling by the ecosystem. Repeated short cycle of *podu* has created forest canopy gaps, which can be seen as thin forests from a distance (Biswal and Kumar, 2013). In addition to that as the hill slopes are bit rocky, the torrential rains help the soil erode faster. Also because of frequent clearing of forests for shifting cultivation, the patches of land left for tree growth don't grow as required naturally. Consequently when those lands are cut down for a new cycle of swidden cultivation, the ashes, resulting out of burning material, can't provide adequate manure for the practice of shifting cultivation. All this gives rise to desert like conditions. And most importantly, the disaster of landslide looms large in case of heavy rain.

5. Challenges at Field Preparation and Crop Development

With lack of proper spacing of the horticultural crops, the orchards look crowded and do not give good yield. In case of horticulture however, people hardly consider the fertility aspect and choose those plots which have lost their fertility. Hence, soil fertility is not a major factor considered by the people at the time of undertaking monoculture plantations. Apart that pest management practices are not up to date as new pests and weeds are appearing on the pineapple orchards. Besides, climatic factors aggravate the situation. If the precipitation happens to be more, for instance, the flowers of the pineapples fall down. Similarly the orange gardens are fast disappearing from the Bada lands (kitchen garden), due to changes in soil content. Also the mango and jack fruit trees don't flower perfectly now. For example, by the Baula Amabasyav, the mango trees should have full of flowers in the trees. But due to the heavy fog, the mango flowers get damaged.

6. Post Harvest Challenges:

Post harvest, people struggle treating the produces so that they can give better values to the labour and other costs. One of the major issue is proper drying at right time and right palce to make sure that the water content is absolutely zero or minimal. Turmeric, for instance, need to be properly dried. Else it will be damaged by pests or yeasts. Similarly the various pulses like *jhudunga, kating, kolatha* etc. are required to be dried at least for five to six days. Some produces they keep in the field itself are consumed by the cattles, monkeys and other herbivores. As the *Dongrias* have very little space for drying within the house, they are bound to dry them in the open which get

spoiled by the rains. For boiling the produce, major requirement is labour, firewoods, and big utensils. These are not sufficiently made available. Lack of cold storage facilities results in low productivity for the kitchen garden items including vegetables and other horticultural products like mango, pineapple, oranges, jack friut, ginger etc.

7. Challenges in the Trading and Marketing:

The Dongrias heavily depend upon the weekly market at Chatikona as they sell their own produce and purcahse the essential items like edible oil, soap, salt, clothes, dry fish, cosmetics, etc for daily life consumption. However in the consumerism culture with varieties of products in the market and with the price rise, Dongrias are at a loosing side. Earlier when barter was used, they could get better values against their input cost including labor, capital etc. But with relative price rise in essential items vis-a-vis the products of the *Dongrias*, the relative earning of the Dongrias has declined. Moreover the plain people being more cunning cheat the Dongrias either in money or barter transactions. Thus as far as market is concerned after the day's business a Dongria is left with very minimal earning which is insufficient to feed the family for the next seven days.

Challenges in Firewood and MFP Collection, a major part of life and livelihood

Along with horticulture people also depend on the Dongers for collecting firewood and minor forest produce (MFP). However in the present context, they experience many hurdles in collecting the firewood and MFPs as the tree cover is gradually declining. Many reasons for loss of trees:negligence in maintenance of planted trees and lack of proper water facilities and least use of fertilizers affects the survival of planted tress such as mango, jack-fruit, oranges and other naturally grown forest cover; fruit-bearing trees generally planted at panga lands which are mostly rocky and least fertile (because Dongrias leave these areas neglected as nothing can grow here and rather devote time for pineapple and shifting cultivation); massive orchards clearance of forests for shifting cultivation; and also many forests are now declared as reserved forests which the natives earlier used these as part of their resources.

Moreover, compared to the past days bringing firewood takes longtime as they have to walk more along the hill ranges due to the following reasons: bamboo trees and their leaves which form the basic source of firewood are fast disappearing as the roots of the bamboos are consumed as food items (used in curries); along the streams and roadsides big trees have fallen down due to recent cyclones as well as deforestation; they cut down the *sal* and other important big trees to use them as pillars for verandah and main house.

Vulnerability to Climate Change as the Biggest Potential Challenges

Vulnerability is "a concept that links the relationship that people have with their environment to social forces and institutions and the cultural values that sustain and contest them" (Oni and Okanlawonl, 2013). Vulnerability can be manifested in different ways, such as social vulnerability, economic vulnerability and biophysical vulnerability.

1. Bio-Physical Vulnerability:

Population are considered vulnerable if they live in hazardous location having prone to natural hazards such as landslides and drought; and their capability to reduce the effect of hazards via adaptation in imensely down played (Oni and Okanlawon, 2013). In the case of the Dongrias cultivation is severely affected by the impact of climate change. The effect is noticed as agriculture and horticulture is rainfed and essential for the daily subsistence. Across the hill ranges people already are experiencing changing patterns of precipitation and temperature. There are projections of increases in untimely rainfall due to formation of regular low pressure zones in the Bay of Bengal regions accompanied by severe storms like Phailin and Hud Hud. As the Niyamgiri hill ranges are situated in the tropics in the windward side, the Dongrias become particularly vulnerable to cyclones and hailstroms. Similarly the empact of global warming is noticed as the mean temperature has been increasing (Table 2). At the same time during the winter due to drastic decline in temperature it gives drying effect. As a corollary, the winter crops get damaged due

Table 2: Deviations in Climatic Indicators

Indicators	Normal range (average)	Deviations (average)
Rainfall	140 – 160 mm	110 – 200 mm
Temperature	27-32°c	22-37°c
Humidity	80-90	75-95

to frost activities.

Crop response to climate change: The crops, for instance pulses, have shown to react negatively to climate change. The per capita yield for households has reduced substantially. If I take the example of the ginger production, around a decade ago, people say that the yield used to be seven to eight quintals from a small patch of land measuring around half a acre, which currently amounts to hardly to four to five quintals. Though the quantity of pineapple production has increased (mainly due to more coverage of area for plantation), but the quality has drastically reduced. Similarly the water content and sweetness has reduced unlike the earlier ones. The rice cultivation is suffering from some new type of unidentified pests. Another siginificant aspect is the timing of the swiddening. While majorly the cycle of *podu chash* has been normal in general, the sowing period, hoeing and harvesting time have

Table 3: Deviations Found in Sowing and Reaping Periods

Crops	Normal timing for sowing	Deviations found
Turmeric	January/February	February/March
Ginger	June/July	August
Rice	May	July
Pulses	May	July
Pineapple	May/June (harvesting)	July

been found to be fluctuating due to deviations as noticed by the people (Table 3).

2. Social Vulnerability:

Social conditions enhance or reduce the susceptibility in hazardous events. Social vulnerability has been found related to many factors including marginalization, equity, role of the institutions, food and resources entitlements, economics and politics (Adger and Kelly, 1999). It takes away mental stability and throws multiple livelihood challenges. In case of Dongria settlements, more insolation and heating make the streams, the only source of drinking water and irrigation for kitchen gardens, dry. This reduces the availability of water. In this way climate determines ultimately the level of poverty and the livelihood insecurity among the Dongrias.

3. Economic Vulnerability:

The extent to which individuals, groups

or communities are entitled to use resources determines the ability of that population to cope and adapt to stress (Adger and Kelly, 1999). Inequity within a population can increase social vulnerability to climate change as climate change can alter communal allocation of resources (Oni and Okanlawon, 2013). Unfortunately they lack the financial capacity and technological resources to address the postulated negative impacts of current and predicted climate change. For this no institutional and legal framework or any systematic approach targetting the mitigation and adaptation has not been initiated by the govt.

Other Constraints faced by Dongrias in Adapting to climate change

Any up-down in the mean of climate parameters will have significant influence on agricultural cropping system especially under water limited hilly areas of production in the tropical and semiarid regions (Satish Kumar et al, 2013). Rainfed agriculture is practiced on 80 percent of the world's agriculture area and its importance varies regionally. The whole of *Niyamgiri* hills fall under the rainfed zone and agriculture/horticulture is rain fed. But rain fed agriculture is risky, vulnerable, diverse, complex and under invested (NRAA, 2012). Some of the hill slopes face to the lee way side, they don't receive the rain adequately. Other institutional constraints are extension services, non-availability of institutional credit, and non-availability of drought and pest tolerant varieties of seeds, lack of access to weather forecasting information.

Food Insecurity Affecting Livelihood Opportunities

Food insecurity continues to be a vital economic challenge in developing countries (Abu, 2102). The World Bank defined food security as "access by all people at all times of enough food for an active, healthy life" (World Bank, 1986). Therefore the World Bank definition of food security fundamentally involves three components: food availability, food accessibility and food reliability. First and foremost, the food availability in the case of *Dongrias* is not sufficient. Further, while the staple food is rice, the production of rice is virtually zero. As a tropical food crop, rice is to be cultivated at those areas having plentiful of water during the initial plantation period. While the *Dongrias* occupy the hill slopes, and therefore getting plain lands for rice cropping is a daunting task. Though some families having lands in the lower reaches of the hills practice terrace cultivation, the productivity is very minimal due to soil infertility, low use of manures and fertilizers and old techniques of rice cultivation. Moreover, these lands for terrace cultivation are very small in size. The output per acre accordingly is less than plain areas. Therefore the *Dongrias* are virtually not food secured.

Burden of health hazards complicating Livelihood Challenges.

Dongrias suffer from a vast number of diseases which they percive as the angriness of the dead ancestors or dissatisfaction of the gods and goddesses or black magic pursued by enemies. Majority of income earned is spent in disease diagnostics and treatment. Major diseases found among the Dongrias are as follows:

- *Diarrhea*: A viral disease and arises in rainy season when the stream water, which they consume directly, carries many harmful microbes. Further they eat non-frozen meats that are contaminated.
- Skin diseases: Older people are found not to clean up the body with water urinating or excreting. Because cleaning the body in the stream is a sin by the Dongrias, as at that point of time the body is considered impure. Majority of the old men and nearly all women found not to be wearing sandals or sleepers. This is the principal reason for incidence of different kinds of wurm infections. They develop various types of wurm infections such as Curb and Rounded wurms. There are multiples reasons for not using the sandals. Old people are not habituated to use *chappals*. Second, the women folk are not allowed to wear *chappals* though now a days the girls are found to use them.
- Malaria: The Niyamgiri hill ranges, being a tropical zone, is a malria prone area. Although often reffered to as the disease of the poor, difficulties in malaria prevention often associated with poor houseing conditions, which enhance mosquito breeding and exposure of household members to their deleterious bites.
- *Gynecological complications*: Gonorrhea (vaginal scratching) due to uncleaniness of

body and napkins of mensrtual blood. This is the main health problem faced the *Dongria* women. In monthly menstrual cycle, they complain severe pain and itching. The local pharmacists also held that many were found

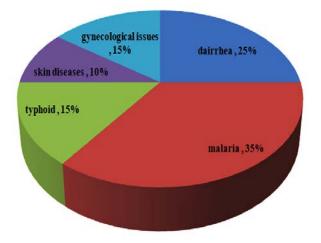


Fig. 1: Major disease patterns found among the Dongrias

to be developing cervical cancer leading to still birth in some cases.

Data were collected based on last six months to one year expenditure on health and related activities. On three categories of women and child, aged and in general, the data were gathered. Four aspects of health were highlighted so that a proper analysis could come out. It was found that a large chunk of livelihood earnings were being spent on health as shown in Fig. 2. This indicates that the Govt. support in health is minimal. Therefore the out of pocket expenditure is more, that to in communicable diseases where the public spending should cater to the needs of the poor tribals. However the general complain is that though funding is being disbursed for the tribal health, it hardly materializes on the ground due to corruption issues. Among the women category, major spending was on medicine and transportation, same in the aged category. Of the four indicators identified, trasporation and medicine expenses take the lions' share. Thus more emphsis should be given in these two areas by the local administration. Similarly, the expenditure on various lab testing is also high. This has to be done free of cost for to save the hard owned livelihood by the Dongrias. Therefore, adequate ambulances, generic medicines and pathological staffs must

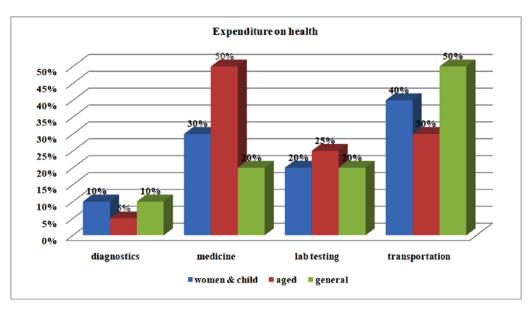


Fig. 2: Expenditure on health by the *Dongrias*

be increased in the PHC at *Kurli* panchayat headquarters.

While the non-communicable diseases number is multiplying along with the infectious diseases, the capacity to cope with and adapt to different stress and shocks linked to climate change is reduced. This becomes a livelihood challenge for both biologically and socio-economically the person feels fatigu and the daily work turns into a burden. In case a bread owner dies, say due to malaria, then the family is near to devastation. The mother would find it difficult to cope with the changing socioeconomic and ecological circumstances while the proper upbringing of the children will be at stake as they are mainly nuclear families.

Shying Nature and Clan Feuds of Dongrias and Livelihood Challenge

Many literature including British officers have documented that the *Dongrias* are very sober, peace loving and hesitators to the outside world. This nature of unwillingness to interact with the external world makes them isolated and don't provide them the opportunity to get exposure to other peoples. The shying nature, as per the young generation, has been the biggest stumbling block in the advancement of their society. To them, though people have all the basic requirements they have not been able to utilize the resources for a viable commercially oriented practice. This eventually affects the livehood opportunities and turns into a challenge. However some kind of business entrepreneurs are quite eager to open up new avenues like transport, vegetable export to outside markets etc. Broom making has become a common way of earning livelihood there. Though at a village or broader level, people have good ties and cooperation, they have a very bad and retaliatory feeling towards other fellow *Dongrias* at least in some instances.

For instance, as the *Dongrias* were shying in nature, they needed help of some medium to interact with the outsiders. Then the *Dombs* were invited from the plains. By nature, the *Dombs* are very cunning. After settllement in the *Dongria* villages, they worked as the *Barik* (messanger) for the *Dongrias*. Gradually they tried to manipulate the *Dongria* livelihood. They provided them the much needed money for plantation, for marriage occasions etc. So the *Dongrias* in turn started believing them. In the return of money they take the pineapple orchards as mortgage. While they might have provided Rs. 5000-10000 for an orchard, the *Dombs* could earn upto Rs. 40000–50000.

Nayak (1989) said about the clan feuds of the *Dongrias*. Even within the villages they fight for the saplings. The fellow disputes for the land and women makes sometimes the streets red for mutual killing happens often. This revenge spirit is found in the *Meriah* festival where the locals or visitors can injure the opponent parties at the site of the buffalo sacrifice.

Livelihood quantified

If the monthly and annual income from different sources of livelihood is estimated, it shows the pathetic plights of the *Dongrias*. While horticulture dominates the main source of earning, it is being supported by other ways of income generation such as manual labour, pastoral activities, migation remittances, foraging from the forests and minuscule agricultural practices. With shifting cultivation declining in its regular cycles and productivity, the conventional earning is getting slashed. But the irony is that it's not being adequately accomodated by other auxillary activities. Also with srtingent forest laws, MFP collections are severly affected.

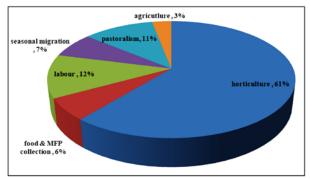


Fig. 3: Sources of income of Dongrias

Because community rights over the forests still are not being cleared even after a decade of the Forest Rights Act, 2006.

Manual unskilled labour is now a days seen in MGNREGA works but skilled labour is absent. That is why labour can not reinforce a sizeable family income based on it. Due to village life, skilled labour too does not find a place to explore. Pastoral activities have more potentials to out perform all economic practices but seasonal dieseases to the bovine population and other domesticated animals are negatively affecting the locals livelihood. Unfortunately they don't get real time support from the veterinary authorities.

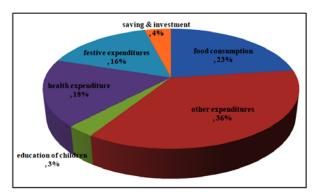


Fig. 4: Annual expenditure and savings of a Dongria family

Agriculture is limited due to the hilly terrains. The terrace cultivation is not taken up massively which requires more water consumption.

Similarly, if the expenditure pattern of the Dongrias is considered, it depicts a sorry state of affairs because the savings and investment side is very less in compared to the the consumption pattern. Another significant highlighter is that spending behaviour in festive occasions is relatively more when compared to other areas. The extrvagant spending in all rituals prove a costly affairs to the Dongrias. This takes away a large chunk of the income of the people. Of this, the health expenditure is unnecessarily being burnt by them that should have been the priority of the Govt. The category 'other expenditures' also is relatively high which constitutes the daily usages like grocery items, sanitary, tabacco products. It does not include productive assets.

SUMMARY AND CONCLUSION

Without a sustainable livelihood, surviving in a growing population with vagaries of nature is a Herculean task. The Dongrias are struck with numerous livelihood difficulties. It's not that policies or schemes are not devised to economically empower them but it's the very implementation which holds the key. Some urgent steps need to be initiated on war footing. For instance, it is of the view of the researcher that considering the water scarcity and soil condition, the sprinkle irrigation would go a long way to majorly benefit the locals and improving their crop productivity. New seeds should be introduced which give yield twice a year, at least for the horticulture crops. Similarly to better improve the marketing of the perishable items, if cold storage facility at least for bigger villages colud be managed, then huge advantages would be gained to the people. As health issues are emerging as the biggest out of pocket expenditure on part of the Dongrias, major steps need to be taken on community basis such as regular health check-ups, providinf helath lits, mass screening for genetic diseases etc. Further the development agency (DKDA) should focus on alternative modes of livelihoods like broom making, planting medicinal tress, cattle and poultry farming, commercially producing the horticultural crops etc. To conclude, more research on livelihood using quantitative methods could a long way to measure the actual conditons at grassroot level.

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FOOTNOTE

- i Dongria Kondh Development Agency, a Micro Project, established during 5th Five Year Plan for the over-all development of the Dongria Kondhs.
- ii Hill lands of Dongrias for both cultivation and settlement.
- MGNREGA, 2006, passed by Parliament of India to provide manual work within 15 days of registration for at least 100 days of a year.
- iv Fallow period in the practice of shifting cultivation.
- v A Dongria festival to welcome the mango flowers in the spring season.