



# Search for Theoretical Model to Measure Displacement: Anthropological Reflections

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## Abstract

*The Mass displacement of people either forcibly or involuntarily refers its starting from the colonial rule developmental programmes. Unbridled greed for development resulted in massive destruction of trees to build ships and also to lay railway track which eventually led to displacement of the people from their original habitation where they lived since time immemorial. It further debased them by ruining their livelihood, degrading their environment, disarticulating and disturbing their socio cultural institutions. This trauma of displacement coupled and cuddled even after the independence by constructing large irrigation dams, coal mining, and industrialization. Although, development programmes aim at developing and providing better life, displacement of people became inevitable either involuntarily or forcibly. However, when it comes to the displacement or resettlement it is lower stratum of people mostly tribals and scheduled caste people who are badly affected while others enjoy the fruits of the national development of this kind. They are forced to offer their socio-cultural and economic sacrifices at the altar of national interest. With reference to the above background, this paper being empirical in nature deals with three anthropological theoretical models proposed by anthropologists and reflects on them. Based on the empirical field experience with the displaced Banjara tribals due to Nagarjuna Sagar Dam which is located in Guntur district of Andhra Pradesh, India. It suggests some modifications to the existing theoretical models. This paper concludes that the anthropological models are most suitable to understand the social realities when the society is in a state of flux.*

**Keywords:** Displacement and rehabilitation, Tribal Development, Development Anthropology, Anthropological Theoretical Models to Measure Displacement.

## Introduction

This paper is divided in to three parts. In first part it tries to present an analysis of the roots of displacement in India during colonial rule and post-independence era and how it took strenuous step to accelerate its pace by building mammoth irrigation dam projects and other developmental projects. In second part, it narrows down to seek for the anthropological theoretical models which will be helpful to measure displacement and also to understand peoples' impoverishment risks being faced. In third part it tries to examine one of the theoretical model that was proposed by Michael Cernea i.e. Impoverishment Risks and Reconstruction model to measure displacement and rehabilitation of Banjaras (Lambadas) who were displaced due to construction of Nagarjuna Sagar Dam. On this basis it tries to find out the flaws and lacunae within the IRR model and suggests modifications to the theoretical models enabling them to measure the problems of Project Displaced Peoples (PDPs) and Project Displaced Families (PDFs).

**Displacement during colonial rule:** The colonial government perceived the tribes essentially as encroachers and enemies of the forest, as if they are plundering the forest for their self-interested necessities. Different forest acts like Indian Forest Act 1878<sup>1</sup>, The Forest Act of 1927<sup>2</sup> and enactments of the State, had provided few special provision to Britishers to exercise

monopoly over forests. In a similar vein, forests were categorised as reserve forests and consequently tribals were evacuated from the forest. Tribals who had accustomed to live in these forests since time immemorial, had lost accesses to their habitation, their property, livelihood practices and all other things that they had. Gradually, the engagements of tribals and other poor peoples who had been to forest to collect forest produces were sternly truncated. Constructions of irrigation dams and water reservoirs have displaced tribals in a massive number. Many tribal hamlets had been submerged in the development projects of this kind.

**Post independent scenario:** Since independence in 1947, number of big dams were built on few of the main rivers of India. Big dams which were assured to unravel the problem of hungry and starving of the citizens of India by providing irrigation facilities to improve food production, to control floods and to provide greatly required electricity for achieving growth in industrial realm. By considering all these great promises Pandit Nehru, our first Prime Minister, called the dams as

“Secular temples” of modern India. The other side of the coin is, these dams will disturb the existing environment and social systems. All the disturbances are justified by national interest and for the industrial growth and agricultural advancements of India. The other developmental projects which were displaced

people in a mass scale other than constructing irrigation dams include establishing the power projects, executing the mining for various metals and minerals, establishing industries, developing related infrastructures, laying the roads and railways for improving transportation facilities, making the plans for urban development, planting the moneymaking forestry and so on. Few of these projects have fetched adversative problems due to displacement of people from their habitation as the land acquisition has taken place at the highest level. Developmental projects are undoubtedly brought tremendous impact economically but at the same time they had also fetched unadorned social, ecological and economic problems to displaced communities. Among all the developmental projects the multipurpose dams take major part in displacing people. The dams also submerge the high quality land, destruct the watershed, cause disturbance to the ecological balance, distortion of the adjacent environment, and the harm to the wildlife and nonpareil precious flora and fauna etc. By considering the above said adverse effects Kothari says: “The experience of post-Independence period from projects across the country suggests that the long drawn out process of displacement has caused widespread traumatic psychological and socio-cultural consequences like the dismantling of traditional production systems, desecration of ancestral sacred zones, graves and places of worship, scattering of kinship groups, disruptions of family system and informal social network<sup>3</sup>”.

**Impact on tribals:** India occupies the second place in accommodating large number of tribal population in the world after Africa. According to the Census 2001 the Scheduled Tribe population in Andhra Pradesh, is 50.24 lakhs. It is the tribals and other rural communities that were displaced in highest number due to their vulnerability in socio economic parameters and their choice to dwell in the vicinity of rich natural resources for their livelihood. It can be observed that a huge majority of those displaced belong to the deprived, and underprivileged classes. The utmost grievous problem of displacement for the tribal people is captivating their agricultural land which

eventually caused to lose their customary livelihoods. Walter Fernandes has attempted to estimate the displaced persons during the period of 1950-1990<sup>4</sup>. The table below shows the magnitude of displacement in India see Table 1.

### Review of Literature

Anthropological studies on displacement and rehabilitation started in India around the late 50's and early 60's. Two important studies of this period are worth mentioning. One is Roy Burman's study of displaced tribals of Sundergarh district of Orissa due to the construction of Rourkela Steel Plant highlighted various factors affecting the process of displacement<sup>5</sup>. And the second one is Karve and Nimbakar's study of Koyna Dam Project dealt with the impact of displacement and rehabilitation on family and kinship system of the uprooted communities of Maharashtra<sup>6</sup>. After the 1970's and the early 80's the primary concern of the anthropological studies was the issue of economic versus social cost, the antagonism towards big dam, the state policies on displacement and rehabilitation, and macro-level evaluation of large dams in India<sup>7-11</sup>. One of the noticeable study of this time would be the work of Agarwal, Rao and Reddy who were engaged in understanding the Yanadi tribe which is to be displaced for the construction of ISRO (Institute of Space and Research Organization), Sriharikota<sup>12</sup>. They had developed a model which is of action oriented and people centric with its philosophy to introduction of change without loss of identity and increase self-reliance.

Towards the later part of the 80's and early 90's social anthropologists had given attention to this issue of displacement by coal mining, by NALCO Projects, Upper Indravati Hydro Electric Power Project in Orissa, Mahapatra 1991<sup>13</sup>, Baboo 1992<sup>14</sup>, Bavisakar 1995<sup>15</sup>. Behura's study of relocatees of Rengali dam in Orissa analyses the rehabilitation policy, highlights the economic problem and socio-cultural consequences<sup>16</sup>. It provides an understanding of the dynamics of social change with special reference to sibling relationship, nature of cooperation, causes of conflict and the institution of kinship and marriage.

**Table-1**  
**A Conservative Estimate of Persons Displaced By Various Categories of Projects**

Type of Project	No. of Displaced	No. of Rehabilitated	Backing
Coal and other mines	17,00,000	4,50,000	12,50,000
Dam and Canals	1,10,00,000	27,50,000	82,50,000
Industries	10,00,000	3,00,000	7,00,000
Sanctuaries and Parks	6,00,000	1,50,000	4,50,000
Others	12,00,000	3,00,000	9,00,000
Total	1,65,00,000	39,50,000	1,15,00,000

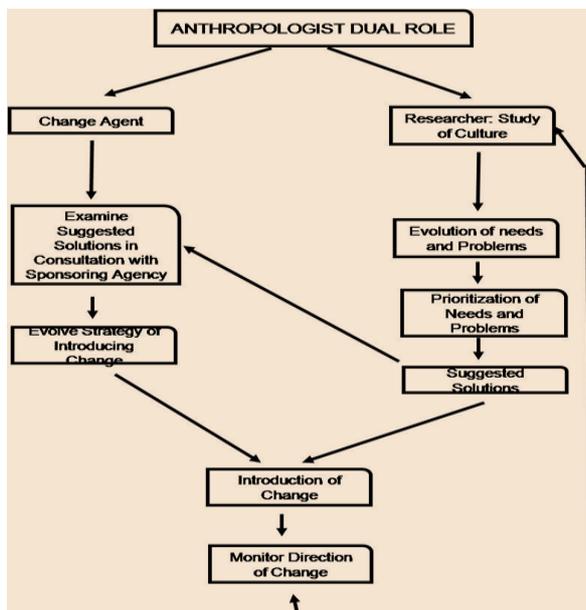
Source: Walter Fernandes, J C Das and Sam Rao: Displacement and rehabilitation- an Estimation of Extent and Prospects. Indian Social Institute (1989)

Anthropological studies started to stress on people's participation and involvement of anthropologist or sociologist in the issues of displacement and rehabilitation apart from the socio-cultural and ritual disarticulation due to displacement and resettlement in new areas. There are studies which provide suggestions or recommendations to policy makers based on their empirical field level experiences Maninder Gill 2000<sup>17</sup>, Jayantha Perera 2000<sup>18</sup>, Arpan Sharma 2003<sup>19</sup>, Roxamine Hakim 1996<sup>20</sup>, Mamata Swan 1999<sup>21</sup>, Manish Kumar Verma 2004<sup>22</sup>, Kunj Bihari Nayak 2004<sup>23</sup>, Hari Mohan Mathur 2006<sup>24</sup>, Rambabu Mallavarapu 2007<sup>25</sup>, Misra K.K. 2007<sup>26</sup>.

### Theoretical Models

From the above review, three anthropological models are identified. They can be used to explain the displacement and rehabilitation within anthropological framework. They would also be useful to estimate or to quantify the socio-cultural loss besides economic and educational loss. They are: Action oriented Model by Agarwal C. Binod, N. Sudhakar Rao and Gurivi Reddy<sup>12</sup>, Scudder and Elizabeth Colson Four Stage Model<sup>27</sup> and Impoverishment Risks and Reconstruction Model by Michael Cernea<sup>28</sup>

**Action Oriented Model:** This model was proposed by Agarwal, Sudhakar Rao and Gurivi Reddy<sup>12</sup> while they are working with the Yanadi tribe in Sriharikota, Nellore District, of Andhra Pradesh, India. They thought of understanding the culture and give suggestions to the government of India before Yanadi's are displaced because of forthcoming ISRO building. Since they found no suitable model to understand the Indian tribes from Indian perspective, they had evolved their own model that is presented in next page (see figure 1).



Source: Agarwal, Rao and Reddy<sup>12</sup>

**Figure-1**  
**Action Oriented Model**

They advocated that anthropologist has to play dual roles. One is researcher and the other is change agent. Former role is to take up the problems and needs of people for evaluation from the emic perspective, prioritizing them and give suggestions to tackle the problem that eventually lead to introduction of change. Later role insists that just by giving mere suggestions is not enough, being a change agent anthropologist must examine the suggested solutions in consultation with sponsoring agency and evolve strategy of introducing the change and monitor the direction of the change.

**Reflection:** Action oriented model proposed by Agarwal C. Binod, N. Sudhakar Rao and Gurivi Reddy is the Indian model suggested by Indian anthropologists who have the experience and exposure to the Indian tribes. This has lot of advantage if it is really implemented as it was in ISRO project. Involving the anthropologist or sociologist is the key to successful resettlement of Yanadi tribes.

**Scudder and Colson Four Stage Model:** In the early 1980s, Scudder and Colson proposed a model to deal with the voluntary displacement, consequent rehabilitation and how people along with socio-cultural systems react to resettlement. According to his model, he divides the entire displacement and resettlement in to four stages/phases. The stages were categorized as recruitment stage, transition stage, potential development stage, and handing over/incorporation stage. In recruitment stage policymakers or planners have proposal about developmental plan or project such as dam construction or establishing hydroelectric project and people's displacement and rehabilitation plans. In majority of cases this happens without notifying those to be displaced. In the transition phase, people will come to know that they are going to be displaced from their native place and will be resettled in alien places. This will naturally increase the psychological stress of people. This stage as is it aptly named transition to elucidate the real condition of the people to be displaced. Potential development stage begins after people were physically removed from the original habitation and relocated in strange place. This is a stage wherein displaced people will start reconstructing their economic activities and social relations with neighbouring community for maintaining peaceful social networks with neighbouring communities. In handing over or incorporation stage local socio-economic systems and communal headship will be handed over to a second generation of inhabitants. After reaching this stage they feel like they are at their home in the community. If this stage has been attained, resettlement is reckoned to be a successful endeavour.

**Reflection:** This four-stage model proposed by Scudder and Colson is aimed to provide static picture of displacement and it does give suggestions neither to policy makers nor instructions in favour of Project Displaced Persons and Project Displaced Families to be implemented in the prescribed four stages. People's participation has not taken into consideration in this model, it has not thrown its light upon people's problems at

these four stages and remedies for their problems, and it indirectly encourages displacement by neglecting the people's livelihood, environmental, educational, socio-political-economic loss and cultural disturbances which is to give prime importance among all losses. It tries to provide description and diagnosis of the disease called displacement and resettlement but not the prescription and prognosis of the disease called displacement and resettlement. It has not considered the loss of flora and fauna in original villages which can't be replicable. It has not made any attempt to give suggestion/s to policy makers. It doesn't have any guiding principles not only to rebuild the economy of displaced people but also to build socio-cultural institutions in the resettlement colony.

**IRR Model:** Impoverishment Risks and Reconstruction (IRR) model proposed by Michael Cernea in the 1990s. In divergence to the above mentioned Scudder and Colson four stage model, the IRR model does not endeavour to identify different stages of resettlement, but it aims to categorise the impoverishment risks involved in the displacement and resettlement process. Michael Cernea formulated this model to reconstruct the impoverished risks of the people by displacement. He points out the following risks. i. Landlessness, ii. Joblessness, iii. Homelessness, iv. Marginalization, v. Increased morbidity and mortality, vi. Food insecurity, vii. Loss of access to common property, viii. Social Disarticulation<sup>28</sup>.

i. Landlessness: The moment people were displaced from their village they become landless people. Their land, which is cradle of their culture, will be lost. ii. Joblessness: -When people are displaced, landless people will lose their wages. Even agriculturalists will lose their job i.e. cultivating land. Service workers (carpenters, pot maker), artisans or small businessmen will become jobless people. iii. Homelessness: - Loss of house may not seem to be a loss as government will build a house in resettlement colony, but their house in their original village cannot be replaced in its structure as it was associated with the group's cultural space. iv. Marginalization: - It arises when families lose economic resources. Middle class families will become small land holders, small shopkeepers will be slipped in to below poverty thresholds. Psychological marginalization also occurs. Marginalization enters into their social and behavioral veins. Economic marginalization originates long before tangible displacement. v. Increased morbidity and mortality: - Severe deterioration of health will be triggered social stress, anxiety, psychological distress, parasitic and vector borne diseases such as malaria. Precarious drinking water source and improper drainage system will pave a path to diarrhea, dysentery and etc. The feeble people of the society like toddlers, children, pregnant women, and old people are affected badly due to their vulnerable conditions. As a result the rate of morbidity goes up than the normal. vi. Food insecurity: - Forced displacement upsurges this risk and people will fall into prolonged undernourishment, intake food level will be down seized because of food insecurity. vii. Loss of access to common property: -Generally, loss of common property assets will not be

compensated by government relocation schemes. Even in rehabilitation colonies, problems start with neighboring / host community with the common property assets only. viii. Social Disarticulation:-Involuntary displacement breaks the prevailing social equilibrium. It splits communities, pull to pieces social organization and interpersonal bonds, kinship groups will be disseminated. They feel like they have lost their cultural identity. Community's geographical, historical, and cultural factors are gone.

**Framework to reconstruct the risks:** Michael Cernea also had given a Framework to reconstruct these eight risks that is being presented here. From Landlessness to land based resettlement, From Joblessness to reemployment, From Homelessness to house reconstruction, From Social disarticulation to community reconstruction, From Marginalization to social inclusion, From Expropriation to restoration of community assets, From Food insecurity to adequate nutrition, From Increased morbidity and mortality to better health care<sup>28</sup>.

Michael Cernea's Impoverishment Risks Reconstruction Model has its own uniqueness as it has four functions. The first function is A diagnostic function: Explanatory and cognitive function, the second one is A predictive function: - Warning and Planning function, third one is A problem-resolution function: - For guiding and measuring resettlers' reestablishment and the fourth one is A research function: for formulating hypotheses and conducting theory-led field investigations<sup>28</sup>.

**Additions to the IRR model:** Apart from these eight risks, scholars like L.K. Mahapatra<sup>29</sup>, Robinson<sup>30</sup>, Sarbeswar Sahoo<sup>31</sup> and Syam Kumar<sup>32</sup> added four more impoverishment risks for the displaced people. They are: Loss of Educational Opportunities by L.K. Mahapatra<sup>29</sup>, Loss of Access to Community Service by Robinson<sup>30</sup>, Violation of Human Rights by Sarbeswar Sahoo<sup>31</sup>, Loss of Live Stock by Ch. Syam Kumar<sup>32</sup>.

**Displacement due to Nagarjuna Sagar Dam:** Nagarjuna Sagar Dam is masonry dam built on the Krishna River in Nagarjuna Sagar, Andhra Pradesh, India. The hydroelectric plant has a power generation capacity of 815.6 MW with eight units<sup>33</sup>. Two canals were constructed to supply water from this reservoir to provide irrigation water for four districts i.e. Nalgonda, Prakasam, Khammam and Guntur. The right canal (Jawahar canal) is two hundred and three kilo meters long and irrigates 1.113 million acres of land. The left canal (Lalbahadur Shastri canal) is 295 km long and irrigates 1.03 million acres of land. Total Catchment Area is about 215000 sq. km (83012 sq. m). Approximately fifty two villages were submerged in this water reservoir and 24,000 people were affected. The issue of rehabilitation of the villagers from these submerged villages can be examined in order to understand the relevance and applicability of anthropological theoretical models to decipher social realities when a particular community is in a state of flux. Keeping this in view this paper tries to present the experiences

of one of the resettled colonies i.e. Chinthala Thanda in which people from three different Banjara hamlets of Nalgonda district were resettled in Guntur District.

**IRR Model in Anthropology:** In a broader sense, IRR Model has its own unique and intricate relation with anthropology in all eight risks pointed out by Michael Cernea. Many anthropologists used this model to know the intricate tribal problems during displacement and resettlement, few anthropologists tried to give suggestions to the policy makers based on their empirical fieldwork experience.

**Landlessness:** Being anthropologists, we cannot isolate land from the natives' culture, as land is the cradle of their culture. For the purpose of this study, land has been divided in to three types based on the cultural importance. There may be other types of land that have immense cultural significance but study restricts to test the three types of land. They are: Agricultural Land, Cremation Land, and Grazing Land. In these three types of land, socio-cultural factors can be observed. In agricultural land, before starting the agricultural work for that year, natives offer or perform some of the culturally driven religious activities like sacrifices or pooja and other religious performances to seek favors from gods or goddesses, for better yield. When they lost their original land, in which they have been practicing agriculture since time immemorial they not only lost the agricultural land but the cultural or religious activities, which were associated with their agricultural land.

As far as the cremation ground of their original village is concerned, during the burial of the dead, there will be many kinship obligations in cremation ground in disposing the dead, (The relatives are obliged to undertake various religious performances and prayers for dead person's soul to rest in peace in heaven). When they are displaced and resettled in alien places (Resettlement Colony) the government had no concern about this cremation ground and did not allot a place for village burial ground where plethora of their cultural and religious and kinship obligations were being performed in the original village.

As far as grazing land of their original village is concerned, in original village, traditional political leaders used to mark the grazing land boundaries to clan members in the Thanda. Accordingly, they must feed their livestock in the original village. Likewise, it has unique and intricate relation and association with socio-cultural institution. On contrary to their original village, in the resettled colony there was no grazing land provision for their livestock. When the oustees gone to the neighbouring villages to feed their livestock, there started rivalries between them and their neighbouring villagers, and it has created havoc in the resettlement colony.

**Joblessness:** Even in simple societies or preliterate societies, we can find occupational diversification and segmentation. For example, priest in the tribal habitation will not go to the field for cultivating the land as it is prescribed to him that he should be in

the temple and perform religious rituals and ceremonies. He has to obey and perform the religious activities only. A carpenter will never adopt the washer men's job. Banjara's hamlet was simple and small in their number in original village; but still they had occupational diversification. They adopt their jobs according to their financial status and according to the instructions given by their elderly family members. They adopt agriculture and pastoralism. Although, they are in need of making agricultural implements, they don't produce these implements because it is inferior and can only be undertaken by carpenter who comes to their hamlet from the neighbouring village. But in resettled colony, in the early days of resettlement having no option they were forced to adopt new occupations.

**Homelessness:** For Banjaras home is the centre of their culture in original village as it has a place for their gods and goddesses and a place for their livestock which was considered worthy to worship. Structure and facing of the house used to be decided by the Priest. But in resettled colony there is no priest involvement in deciding about the entrance to the house. As a result, there is no place for livestock and fixed plans were given by NGO members called Village Reconstruction Organization (VRO) who initiated the construction of their houses in the resettled colony. Home in original village and home in resettled colony which was constructed by VRO's initiation is different in structure and size.

**Marginalization:** One of the bitterest outcomes of displacement is marginalization. Michael Cernea talks about three types of marginalization. Psychological marginalization; which actually starts when they were informed about their displacement from their original village and resettlement in alien places. Economic marginalization; which actually starts for them during resettlement itself. Nominal compensation paid to them was spent in no time as they have to construct the house and get each and every thing to live (food grains) from the market as they were resettled in alien land. Social marginalization; this was experienced by the Banjaras when rivalries were taken place with neighbouring villages with regard to grazing land.

**Increased morbidity and mortality:** In the original village, there used to be ethno-medical practitioner who was well versed with ethno-medicinal plants and preparation of ethno medicine with the leaves, tubers and plants, which are abundantly available in the forest. In the resettled colony, in initial years morbidity and mortality were high; as the government did not provide hospital facility. Ethno-medical practitioner was also in helpless position as they were away from the forest and their entire village was submerged in the reservoir. As a sequel, morbidity and mortality rate increased in the resettled colony.

**Food insecurity:** Banjaras experienced this loss also. In their original village, they were habituated to eat wheat bread. Rice was considered the sacred food as it was offered to the gods and goddesses. However, in resettled colony, especially in the early years of resettlement, they were forced to eat rice, which has

religious importance and considered as sacred food as they have no grains to make wheat breads.

**Loss of access to common property:** The Banjaras also experienced this loss as they lost access to their common property like forest, grazing land, cremation land, and water channels of their original village. In resettlement colony there was neither common grazing land, nor cremation ground, nor forest and forest produces like fruits, which they collect and sell them in neighbouring villages and towns in their original village. Even water channels were not available in the resettlement colony for the purpose of drinking.

**Social Disarticulation:** Michael Cernea talks about social disarticulation that breaks the existing social equilibrium. It splits communities, pull to pieces social organization and interpersonal bonds, kinship groups will be disseminated. They feel like they have lost their cultural identity. Community's geographical, historical, and cultural factors are gone.

**Added loss by the researcher i.e. Loss of Livestock:** Michael Cernea did not mention in IRR model about this loss. Based on the empirical data collected during the fieldwork and meticulous analysis of the data, it is proved that the Banjaras of Chinthala Thanda had experienced the loss of livestock as government officials did not allow the livestock for transportation by Lorries from the original village to the resettlement colony (Chinthala Thanda). The Banjaras are known for their pastoralism. This is true with the oustees of the Nagarjuna Sagar Dam also. In original village, they had both oxen and goats. However, during the displacement and resettlement government did not allow their livestock to be transported by Lorries. Nevertheless, for Banjaras livestock has tremendous importance in agriculture and in life cycle rituals too. This loss of livestock has affected their agricultural practice and life cycle rituals in the resettlement colony during the initial years. Although, their livestock is one of the source of their livelihood it has not taken in to consideration by the government officials. The Banjaras were informed in their original village that transportation facility will be provided from the original village to resettlement colony only for men and women but not for the livestock. As a sequel, all of them sold out their livestock in Devarakonda market of Nalgonda district at a low cost and came to the resettlement colony without livestock.

**Oxen: A Constant Companion of the Banjaras:** We the human beings have long history of our civilization. The bio-socio cultural evolution was associated and accompanied by the animals like horse, donkey for our requirements. We are well aware of the fact that our fore fathers made use of elephants at the time of construction of historical monuments which are being considered as ornaments of India and international tourist spots. To support this statement Taj Mahal is the best example. We are well aware of the various facts that our forefathers made use of donkeys for transportation; but in Rajasthan camels are

being used for transportation, in rural India live stock (goats, oxen, buffalos, chickens) are of not only economic assets, movable property but also they had cultural, ritual and ceremonial importance. Even in metropolitan cities also we can't restrict ourselves with our fellow human beings alone but we are deeply attached to domestic animals where by people dwelling in metropolitan city also yearn for pets. That is the kind of human-animal association we have been maintaining since time immemorial. Same is the case with that of Banjaras-Oxen association as Banjaras have long history of cattle rearing and pastoral life. The emotional attachment with oxen is seen than the loss of oxen is more than just loss. They feel that their family member is lost, if their oxen are lost, as it has not only supporting them and serving them but also stand as a symbol of religion.

They feed oxen as they feed and look after their children. Without oxen it is unimaginable be a Banjara. In ancient times, they used oxen for transportation from one place to another place as they were constantly wandering. They used to place their luggage on the oxen during their journeys from place to place. When they settled to live in hamlets or Thandas, then onwards they started to make use of the oxen in agriculture for ploughing the land for agriculture and for carrying the yielding on cart to the Thanda. In off-season the Banjaras, leave oxen freely so that they can graze in the open fields. They also go along with oxen to feed them and to herd them in the forest or in the field or in open grazing land. Banjaras care about the oxen and their health also.

During the festivals oxen are decorated beautifully by different colours. The oxen's tails are trimmed and decorated beautifully. Horns of the oxen were also cleansed with water and decorated with the flowers. Much care is taken during the Dipawali (Diwali) festival. A day before the festival the oxen are worshiped. They call it as *govardhana pooja* (worshipping the lord Krishna). The cow dung is used for plastering the floor of their houses.

Many people give several reasons for the importance given to the oxen. It is domesticated and mild animal; it is so powerful; it obeys and does not behave cruelly; it can walk long distances also; it eats grass and leaves which are plenty on the earth; it can bear hunger and thirst; it carries a lot of weight; it accompanies the other oxen; it will not forget the way in which it walks to return, it can withstand any weather conditions their back part is convenient to place luggage. The Banjaras equate feeding oxen with fulfilling dharma (doing righteous acts). According to them, it is associated with their deity Krishna. Although, oxen are part and parcel of the Banjaras' life, the government officials did not care about the livestock and announced that transportation facility is only for the people but not for the livestock. Therefore, having no option they sold in Devarakonda market at cheaper rate.

## Conclusion

Among three anthropological theoretical models IRR model seems to be excellent and functional as it is well designed anthropologically. As the IRR model has four functions in which research function is also one. By utilizing this function based on the empirical data collected during intensive field work other risks can be added. Various scholars added risks to the ones identified by Cernea, still there is a space for others to adopt this model and to add few more risks or losses based on the empirical data. Cernea deserves appreciation as he provided space for research and further development of his IRR model unlike Scudder and Colson who proposed four stage model.

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