CHAPTER 2

IMPOVERISHMENT RISK AND RECONSTRUCTION (IRR) MODEL: SIGNIFICANCE AND LIMITATIONS

2.1 INTRODUCTION:

> *"The effect of neglecting to plan for resettlement is, for the affected people, tantamount to induced impoverishment rather than development. In plain terms, this means that tens of thousands of people are undergoing amplified losses, hardship and suffering that could have been avoided or mitigated if the attempt had been made."—Michael M. Cernea*[1]

Development induced displacement and the resettlement and rehabilitation (R & R) of those involuntarily displaced are processes that have become an inseparable part of India's

[1] Cernea, Michael (1991) *"Involuntary Resettlement: Social Research, Policy and Planning*", in Michael M Cernea (ed.), 'Putting People First: Sociological Variables in Rural Development, Oxford University Press, New York, P. 198.

Michael Cernea: Michael. M. Cernea is a sociologist and anthropologist born in 1931 in Romania who reestablished himself in the USA in 1974 where he has since lived. He is widely recognized for introducing sociological and anthropological approaches into the World Bank. He worked as the World Bank's Senior Adviser for Sociology and Social Policy until 1997. He has also served as Senior Social Adviser to International Organizations such as the UN, OECD, UNDP, FAO, etc on social policy, development, cultural and poverty issues. Cernea has lectured in Universities in the USA, Europe, India, Japan and China. Harvard University invited him as Visiting Scholar in its Department of Anthropology in the academic year 1990-1991. He was also Research Professor of Anthropology and International Affairs at George Washington University. He has authored and edited many books on sociology of development, on social change, population displacement and resettlement, impoverishment and poverty reduction, etc,such as, 'Involuntary Resettlement in Development Projects: Policy Guidelines in World Bank-financed Projects'(1988),'Using Knowledge from Social Science in Development Projects'(1991), 'Sociology, Anthropology and Development'(1994), 'The Risks and Reconstruction Model for Resettling Displaced Populations'(1996), 'Cultural Heritage and Development: A Framework for Action in the Middle East and North Africa'(2001), etc. He has received several awards like 'Solon T. Kimball Award' for public policy and applied anthropology; 'Vasile Conta Prize' from the Romanian Academy; 'Omnia Opera Prize', 'Bronislaw Malinowski Award', etc.

development. It is estimated that 16.5 million persons have been displaced between 1950 and 1989, of whom only 3.95 million have been rehabilitated. The remaining 11.5 are yet to be rehabilitated. The displacement of these persons have been caused by land acquisition for projects as diverse as construction of dams and canals, coal and other mines, industrial development, infrastructure, and the creation of protected areas.[2]

The main reason behind the failure of resettlement and rehabilitation policy relates to insufficient use of social science knowledge in project work. Anthropologists and sociologists have accumulated considerable knowledge on people's responses to, and consequences of, development induced displacement. The policy makers and project designers put emphasis on technical or mechanical sides rather than humanistic side. Development policies of most governments and major agencies, including the World Bank, did not formulate explicit demands that involuntary resettlement operations be carried out under more stringent criteria, based on social knowledge.[3] Till 1960s, it was believed that construction of dam requires technical knowledge and understanding; it has no business with social aspect. This huge misunderstanding has caused unprecedented worries to the project uprooted people in the different parts of the globe.

This changed in 1979-80 when, for the first time, this body of knowledge was operationalized and translated into action guidelines adopted by the World Bank as an explicit policy statement addressing the social issues associated with involuntary resettlement. The formulation of this policy was grounded in social science knowledge. This

[2] Fernandes, Walter, J.C. Das and S. Rao (1989) "Displacement and Rehabilitation: An Estimate of Extent and Prospects", *Development, Displacement and Rehabilitation*, Indian Social Institute, New Delhi, P: 28.
[3] Cernea, Michael M (1991) "Social Science Research and Crafting of Policy on Population Resettlement", World Bank, Environment Department, Washington, D.C., pp: 23-26.

process continued till 1990 when the Operational Directive on Involuntary Resettlement was issued.[4]

Nevertheless, a need still persisted for a conceptual and analytical tool with which the adverse social, economic and cultural impacts of involuntary displacement could be analysed with a view to avoid or minimize displacement, anticipate and predict risks that are involved and to formulate action plans for sustainable development of the displaced by counteracting the anticipated and predictable risks.[5] Development of a nation cannot take place by depriving its common masses from their basic needs of life.

Michael Cernea's Impoverishment Risk and Reconstruction Model meet this need. It captures not only economic but also social and cultural impoverishment, underlining the fact that displaced people lose natural capital, manmade capital, human capital, and social capital.[6]

2.2 Impoverishment Risk and Reconstruction Model (IRR) - A Model of Risk and Risk Avoidance:

The IRR model has been developed by Michael M Cernea in 1990s. In the preliminary basis, he has applied his theory in the resettlement review of almost 200 World Bank's funded

[4]Thangraj, Sam (1998) *"Addressing Impoverishment Risks: Some Examples from World Bank-assisted Projects*", published in the book 'Development Projects and Impoverishment Risks: Resettling Projects-Affected People in India, edited by Hari Mohan Mathur and David Marsden, Oxford University Press, Delhi, P.80.
[5] Ibid.
[6]Mathur, Hari Mohan (1998) "*The Impoverishment Risk Model and its Use as a Planning Tool*" published in the book 'Development Projects and Impoverishment Risks: Resettling Projects-Affected People in India, edited by Hari Mohan Mathur and David Marsden, Oxford University Press, Delhi, P. 68.

projects.[7]M.Cernea has identified two basic objectives of this model, which can be described as follows:

(a) To explain what happens during involuntary displacement

(b) To create a theoretically sound model in order to guide genuine development policy as well as programs so that the risks can be attacked and prevented them from becoming a reality.[8]

2.2.1 Four Functions of the Model:

a) The predictive function

b) The diagnostic function

c) The problem resolution function

d) The research function

The Predictive Function: It is the warning and planning function of the model. The power of predictability lies in the past experiences. This knowledge and experience helps in predicting every possible outcomes of the new situation. The predictions are actually early warnings of major socio- cultural and economic pathologies likely to occur for the project designers and would be displaces so that they can identify the risks more transparently in advance and find out every possible alternative to attack those risks in the proper time. The warnings are actually made long before the decision of displacement is adopted.[9]

[7]Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing,P: 12

[8] ibid

[9]Ibid, P. 13

The Diagnostic Function: It is the explanatory and assessment functions of the model. It provides specific on the ground diagnosis of the project rather than assuming a general situation. Hence, it can rightly point out the intensity (low/moderate/high) of each impoverishment risk in a given situation. The specific diagnosis function can provide information and recommendations essential for project preparation and counter risk measures.[10]

The Problem Resolution Function: It is the action oriented function of the IRR model. It goes beyond prediction and diagnosis and rather prescribes measures for resettlement, rehabilitation and redevelopment of the project uprooted people.[11]

The Research Function: With the strong theoretical background of the IRR model, the social science researchers can conduct their research on development induced displacement, rehabilitation and resettlement in a lucid manner. The model helps the researcher in framing hypothesis among major variables like development, displacement and rehabilitation. More significantly, with keeping the theoretical knowledge of the model in mind, the social science researcher can make field investigation, assess intensity of each risk in a specific situation, evaluates the policies adopted by respective governments as well as make comparisons of each impoverishment risk between different cultures, countries as well as time period.[12]

From the above discussions, it can aptly say that each and every functions of the IRR model are both practically as well as theoretically sound. Moreover, each function is intended to both project designers and project affected people. Here lies the significance of the model.

[10] ibid
[11] Ibid, P. 14
[12] Ibid, P. 14

2.3 Major Impoverishment Risks in Displacement:

In spite of so many diversities in terms of cultures, regions, races, classes as well as time, there are some general impoverishment risks of involuntary displacement which is manifested through a large number of studies conducted in different parts of the globe and in different time frames. On the basis of such empirical evidences, Michael M Cernea has identified eight major risks of impoverishment. If the trends towards impoverishment is not detected in time and no corrective measure is taken for their containment, these potential hazards shall become actual impoverishment disasters.[13]

The eight impoverishment risks as identified by Michael M Cernea can be described as follows:

1) Landlessness
2) Joblessness
3) Homelessness
4) Marginalization
5) Food insecurity
6) Increased morbidity
7) Loss of access to common property resources
8) Community disarticulation.

[13] Mathur, Hari Mohan (1998) "*The Impoverishment Risk Model and its Use as a Planning Tool*" published in the book 'Development Projects and Impoverishment Risks: Resettling Projects-Affected People in India, edited by Hari Mohan Mathur and David Marsden, Oxford University Press, Delhi, P.68.

2.3.1 Landlessness:

> *"Expropriation of land removes the main foundation upon which people's productive systems, commercial activities, and livelihoods are constructed. This is the principal form of de-capitalization and pauperization of displaced people, as they lose both natural and man-made capital."*- Michael. M. Cernea[14]

Landlessness is caused by acquisition of land and it has very serious social and economic consequences not only for displaced persons but also for their families and others who depend on these lands (e.g., agricultural labour, tenants and share croppers).[15] Land enables them to grow food for subsistence and cash crops with which to obtain money to buy essentials. Agriculture supports over two-thirds of India's billion people, and land accounts for two-thirds of the value of all assets in rural areas. In rural India those who control land also control the major sources of income as well as other institutions.[16] If a farmer loses his primary occupation, he also reduces wage and ancillary employment for others. Landlessness not only affects the owners of land but also his family, children, as well as future generations because land provides hidden employment for every member of the family. Therefore, expropriation of land invariably pushes people into the state of acute impoverishment.

---

[14] Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing: 15.

[15] Cernea, Michael (1991) *"Involuntary Resettlement: Social Research, Policy and Planning*", in Michael M Cernea (ed.), 'Putting People First: Sociological Variables in Rural Development, Oxford University Press, New York, P. 34.

[16] ibid

2.3.2 Joblessness:

> *"The risk of losing wage employment is very high in both urban and rural displacements for those employed in enterprises, services, or agriculture. Yet creating new jobs is difficult and requires substantial investment. Unemployment or underdevelopment among resettlers often endures long after physical relocation has been completed."— Michael. M. Cernea*[17]

The nature of joblessness may vary depending on urban and rural areas. In urban areas workers may become jobless by losing jobs in industries or services. In rural areas, it may be loss of access to agricultural land or loss of access to assets under common property regimes.[18] In tribal areas, joblessness can also be seen in terms of loss of income-earning opportunities, particularly for women, through collection of non- timber produce from the forest. In most cases, the resettlers may get employment opportunity in the project for a very short period of time but they may dismiss from the job at any point of time. Literally there is no guarantee of providing employment opportunity to the resettlers after the completion of the project. Joblessness, as a risk, is likely to increase if those to be displaced by urban infrastructure projects are not resettled closer to sources of livelihood within the urban areas.[19]

---

[17]Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing,P. 16.

[18] ibid

[19]Thangraj, Sam (1998) *"Addressing Impoverishment Risks: Some Examples from World Bank-assisted Projects*", published in the book 'Development Projects and Impoverishment Risks: Resettling Projects-

2.3.3 Homelessness:

> *"Loss of shelter tends to be only temporary for many resettlers, but for some, homelessness or a worsening in their housing standards remains a lingering condition. In a broader cultural sense, loss of family's individual home and the loss of a group's cultural space tend to result in alienation and status deprivation."- Michael. M. Cernea*[20]

The uprooted people often unable to incur labour and financial cost of rebuilding a house immediately after displacement and hence bound to move into "temporary" shelters. The "emergency housing centers" and "temporary relocation camps" used by some projects as a "temporary backup" often make homelessness chronic rather than temporary.[21] Homelessness is different from houselessness. A home provides a psychological and even more, a spiritual attachment with ancestors and gives one a sense of belongingness, social and psychological security, and an assurance of togetherness in times of difficulty. If R & R policies do not provide improvement in housing conditions, or if compensation for demolished shelters is paid at assessed market value rather than replacement values, the risk of homeless is increased.

Affected People in India, edited by Hari Mohan Mathur and David Marsden, Oxford University Press, Delhi, P.84.

[20]Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing,P. 17.

[21]Cernea, Michael (1995) "*Eight Main Risks: Impoverishment and Social Justice in Resettlement*", World Bank, Environment Department, Washington, D.C., P. 74.

2.3.4 Marginalization:

> *"Marginalization occurs when families lose economic power and spiral on a downward mobility path. Middle income farm households do not become landless; they become small land holders, small shopkeepers and craftsmen downsize and slip below poverty thresholds. Many individuals cannot use their earlier acquired skills at the new location, human capital is lost or rendered inactive or obsolete. Economic marginalization is often accompanied by social and psychological marginalization, expressed in a drop in the social status, in resettlers' lose of confidence in society and in themselves, a feeling of injustice, and deepened vulnerability. The coerciveness of displacement and victimization of resettlers tend to depreciate resettlers' self image, and they are often perceived by host communities as a socially degraded stigma."*- Michael. M. Cernea[22]

Marginalization can be the outcome of landlessness, joblessness and homelessness. Though marginalization is often looked at through the perspective of loss of livelihood, it is necessary to give attention to the marginalization of women, particularly tribal women,

[22]Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing,P. 18.

because land acquisition and displacement adversely affect their status in the family as well as in the community.[23]

Marginalization is not limited to economic aspects. It has also social and psychological dimensions, as follows: (a) in their existing society, land is a status symbol, the loss of which gives an overwhelming feeling of marginalization; (b) the immigrants, who are usually skilled and experienced, outperform the local people, who get further marginalized, (c) high expectations and false promises, due to the setting up of a project along with the availability of cash compensation, force people to wait. In the process, they lose the available opportunities to outsiders; (d) a strong feeling is created that local people are lethargic and inefficient as compared to outsiders, resulting in alienation from the project, mental agony and xenophobia. (e) ultimately they lose self respect and self esteem and become refugees in their own land.[24]

2.3.5 Food Insecurity:

> *"Forced uprooting increases the risk that people will fall into temporary or chronic undernourishment, defined as calorie-protein intake levels below the minimum necessary for normal growth and work.*"– Michael M. Cernea[25]

[23]Cernea, Michael (1993) *"Anthropological and Sociological Research for Policy Development in Population Resettlement"*, in Michael M. Cerneaans Scott Guggenheim (eds), 'Anthropological Approaches to Resettlement: Policy, Practice and Theory', Westview Press, Boulder, Colo, pp: 67-68.
[24] Agarwal, Dinesh (2000*) "Preventing Impoverishment from Displacement: The NTPC Experience"*, in H.M. Mathur edited book 'Development Projects and Impoverishment Risks: Resettling Project Affected People in India, Oxford University Press, Delhi, pp: 58-59.
[25]Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing. 19.

Food insecurity and undernourishment are both symptoms and consequences of inadequate resettlement. In a report published by the World Bank in 1994, it has been proved that calorie-protein intake level goes below the minimum necessary for normal growth during involuntary displacement.[26] Food insecurity is caused by loss of land, livelihood and access to non-timber produce. These lose affect food production, availability of food and also the pattern of food consumption.[27]In some instances, food relief has to be provided for several years from displacement because of the submersion of huge acres of cultivated land. One example can be taken from Bailiambe reservoir in China where local production becomes insufficient. Undernourishment leads to morbidity and mortality risk.[28]

2.3.6 Increased Morbidity and Mortality:

> *"Massive population displacement threatens to cause serious declines in health levels. Displacement-induced social stress and psychological trauma are sometimes accompanied by the outbreak of relocation-related illnesses, particularly parasitic and vector-born diseases such as malaria and schistosomiasis. Unsafe water supply*

---

[26] The World Bank (1994) *"Resettlement and Development: The Bankwide Review of Projects involving Involuntary Resettlement 1986-1993",* The World Bank Environment Department, Washington DC, P. 48

[27] Ekka, Alexius (1997) *"Development, Displacement and Rehabilitation: A Comparative Study of Selected Villages in the Singhbum District of Bihar"* (unpublished PhD Thesis, Jawaharlal Nehru University, New Delhi), P. 99; citing T. Scudder and E. Colson (1982*): "From Welfare to Development: A Conceptual Framework for the Analysis of Displaced People",* in A. Hansen and A. Oliver Smith (eds.), Involuntary Migration and Resettlement, Westview Press, Boulder, Colorado.

[28]Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing,P. 19.

and improvised sewage systems increase vulnerability to epidemics and chronic diarrhea, dysentery, etc. The weakest segments of the demographic spectrum-infants, children, and the elderly-are affected most strongly."—Michael M. Cernea[29]

Displaced people are more exposed to illness due to stress and unhygienic conditions. And when projects do not incorporate preventative epidemiological measures, the situation gets worse. The direct and secondary effects of involuntary dislocation without preventive health measures range from diseases of poor hygiene, such as diarrhea, and dysentery, to outbreaks of parasitic and vector-borne diseases such as malaria and schistosomiasis caused by unsafe, insufficient water supplies and inadequate sanitary waste systems. The project affected people felt that involuntary displacement and insufficient resettlement had adversely affected their health status and the main causes were mental stress, poor air and water quality, and increased pressures to do more work. Industrialization is also believed to cause pollution, resulting in the degradation of health levels. Studies have also proved that the intensity of the mortality and morbidity risks has been higher in case of vulnerable groups, such as, aged, children, persons with disability and women.

2.3.7 Loss of Access to Common Property Resources (CPRs):

"For poor people, particularly for the landless and assetless, loss of access to the common property assets that belonged to relocated communities (pastures, forested lands, water bodies, burial grounds, quarries, etc.) results in significant deterioration in income and

[29]Ibid, P. 20.

livelihood levels. Typically, losses of common property assets are not compensated by governments. These losses are compounded by loss of access to some public services, such as schools, losses that can be grouped within this category of risks."—Michael. M. Cernea[30]

Empirical studies show that a huge share of poor households' income comes from edible forest products, firewood and deadwood, common grazing areas, and public quarries. Loss of these resources leaves a big gap. For example, in semi-arid regions of India, between 91 and 100 percent of firewood, between 66 and 89 percent of domestic fuel, and between 69 and 80 percent of poor households' grazing needs are supplied by lands held under a common property regime.[31]Losing access to common property resources under traditional or controlled circumstances, displaced people tend either to encroach on reserved forests or put pressure on the CPRs of the host area's population. This may carry new risk of social conflict and environmental degradation.[32]

2.3.8 Social Disarticulation:

"Forced displacement tears apart the existing social fabric. It disperses and fragments communities, dismantles patterns of social organization and interpersonal ties; kinship groups become scattered as well. Life-sustaining informal networks of reciprocal help, local voluntary associations, and self-organized mutual service are disrupted. This is a

[30] Ibid, P. 22
[31]World Bank(1998) "Recent Experience with Involuntary Resettlement, Overview." Operations Evaluation Department, Washington, DC: The World Bank. P 78.

[32]Cernea, Michael. M. (1999) "Development's Painful Social Costs," Introductory Study in S. Parasuraman, The Development Dilemma. Displacement in India, McMillan Press and ISS, pp: 108-09.

> *net loss of valuable "social capital," that compounds the loss of natural, physical, and human capital (discussed previously). The social capital lost through social disarticulation is typically unperceived and uncompensated by the programs causing it, and this real loss has long-term consequences."*- Michael M. Cernea[33]

A detailed sociological study by Behura and Nayak (1993) on a dam project in India found various manifestations of social disarticulation within the kinship system, such as the loosening of intimate bonds, growing alienation and anomie, the weakening of control on interpersonal behavior, and lower cohesion in family structures. Marriages were deferred because dowries, feasts, and gifts became unaffordable. Resettlers' relationships with non-displaced kinsmen were eroded and interaction between individual families was reduced. As a result, participation in group activities decreased; post-harvest communal feasts and pilgrimages were discontinued; and common burial grounds became shapeless and disordered.[34]Displacement leads to the community's loss of ability to manage its socio-economic and cultural affairs due to the weakening of traditional authority, leadership and other means of social control. With the boomtown effect, the smart immigrants outsmart the local people and grab economic opportunities, creating social disarticulation and alienating local people in their own territory. The payment of compensation and rehabilitation assistance to major sons of the affected families leads to splitting of joint families and a loss of family support to the vulnerable members of the family. The emotional bond loosens as

[33]Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing, P. 23.
[34] Baboo, Balgovind(1992)*"Technology and Social Transformation: The Case of the Hirakud Multi-Purpose Dam Project in Orissa"*. New Delhi: Concept Publishing, pp: 123-24.

the need for survival gains greater importance than any other concern and becomes all-important.[35]

2.4 MODELS OF RECONSTRUCTION:

The significance of any involuntary resettlement model lies in its capacity either to restore or make better the displaces' earlier living condition. Hence the IRR model too provides strong measures of reconstruction to prevent above mentioned eight impoverishment risks, which can be described as follows:

2.4.1 From Landlessness to Land-based Reestablishment:

From the above discussion, we come to know how land is valuable for the indigenous people not only from economic purpose but also from socio-cultural point of view. Therefore, to restore people back on cultivable land is the main objective of every developmental projects. If the dam is going to be constructed in the hilly area, then the project designers should make all possible efforts to convert unproductive hill areas into flat terraces for horticulture or into forested area. The project designers should plant a huge amount of valuable orchards at the relocation site several years before the relocation so that 'tress will close to fruit bearing at relocation time.'[36] Relocating people in a desert like area or unfertile land will worsen the conditions of the uprooted people.

Some states of India like Orissa, Madhya Pradesh, Gujrat, etc. seriously attempted to implement the land-for-land option and provided either irrigated or unirrigated land of

[35] Cernea, Michael M. (1995) *"Understanding and Preventing Impoverishment from Displacement: Reflections on the State of Knowledge*". Keynote Address, International Conference on Development Induced Displacement. University of Oxford, England. Journal of Refugee Studies. 8:3:245-264.
[36] Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing, P. 29.

various sizes to displaced persons. In the Upper Indravati Project of Orissa provided either 1.25 acres of irrigated land or 2.5 acres of unirrigated land to each of the displaced persons as the minimum resource base. Again, each project affected family in the Sardar Sarovar project of Gujrat is entitled to five acres of land. But the quantum of land provided got reduced over time, and still more with the promulgation of the Forest Conservation Act, 1980. The process of urbanization and the demand for infrastructure development are likely to reduce the availability of land still further.[37]The conventional policy makers should value 'land' on the basis of 'replacement price' rather than 'market price'. Instead of paying compensation in various segments, they should be paid in one single instalment. The policy makers should make a provision of reconveyance of the unwanted land to original owners-if it is not required by the project.[38]

2.4.2 From Joblessness to Reemployment:

One of the major objectives of the developmental policies must be to create sustainable employment opportunity in the relocation site. The project designers should formulate a strategy for creation of self-employment opportunities to decrease the risk of joblessness. Such a strategy should not only include the poverty profile of the affected villages and the prospective host communities' as suggested by the National Campaign for People's

[37] Ravindran, Latha (1995) *"Socio-economic Study of Displaced Persons under Upper Indravati Project, Orissa",* Xaiver Institute of Management, Bhubaneswar, pp: 37-38.
[38] Thangraj, Sam (1998) *"Addressing Impoverishment Risks: Some Examples from World Bank-assisted Projects*", published in the book 'Development Projects and Impoverishment Risks: Resettling Projects-Affected People in India, edited by Hari Mohan Mathur and David Marsden, Oxford University Press, Delhi, P.84.

Resources, but also include the profile of traditional skills and potential markets, particularly in local areas, for the goods provided and the skills created.[39]

Besides creating employment opportunity in transportation, new enterprises and service sector, there is every potentiality to generate new ray of hope in sectors such as, reservoir fishing, duck raising and animal husbandry.[40] In case of generating employment, the project designers need to look at the specific skills of the uprooted people or community. For example, if a fishing community is uprooted by any developmental projects and they are given the jobs in transportation or industrial sector with whom their entire generation is not accustomed, invariably takes time to handle the new business. Hence, every reemployment scheme requires providing some kind of training about the new job to the displacees beforehand.

2.4.3 From Homelessness to House Reconstruction:

Housing is a basic need and the loss of housing that result from involuntary resettlement and an uncertain future has traumatic impact on the displaced. The real challenge in addressing the risk of homelessness is in urban areas that are likely to be affected by the need to provide increased infrastructure facilities. This is particularly so as they need to resettle those who are considered by the government as squatters, legal encroachers, illegal encroachers and

[39] Cernea, Michael (1995) "*Eight Main Risks: Impoverishment and Social Justice in Resettlement*", World Bank, Environment Department, Washington, D.C., P. 68.
[40] Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing, P. 29.

absentee house owners. But it can be compensated through fair recognition of housing reconstruction costs in the displacing project's budget.[41]

The fair measures of house reconstruction includes more square footage per capita; better quality housing materials, particularly for roofing; connection to services (electricity, water); safer sanitation facilities; space for house gardens; and others. [42] Along with the housing materials, the government should provide housing grant to each project affected people.

2.4.4 From Marginalization to Social Inclusion:

The project designers or policy makers should take the issue of marginalization very seriously. An interesting experiment is being planned to reverse the marginalization of women displaced by the Upper Indravati Hydroelectric Project. The R&R unit of the project, with active involvement of NGOs such as 'Agragamee' and 'the Council of Professional Social Workers', is in the process of organizing 'Udyogi Mahila Sanghas' for the development of micro-enterprises for women. Though a vast majority of the displaced still have access to non-timber produce, the R&R unit is planning to further complement this access through social forestry programmes as part of the Cluster Based and Family Oriented Rehabilitation Action Plan (CBFORAP).[43]

---

[41]Fernandes, Walter, J. C. Das, and S. Rao (1989) *"Displacement and Rehabilitation: An Estimate of Extent and Prospects.*" In Fernandes W. and E. G Thukral (eds.) Development, Displacement and Rehabilitation. New Delhi: Indian Social Institute, pp: 42-43.

[42]Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing, P. 33.

[43]Ravindran, Latha (1995) *"Socio-economic Study of Displaced Persons under Upper Indravati Project, Orissa",* Xaiver Institute of Management, Bhubaneswar, P. 56.

In order to counter the problem of marginalization, one needs to formulate policy by bringing economic, social, cultural as well as psychological aspects together. Because marginalization occurs not only from loss of access to land, job or shelter but also from losing one's self-respect and self-esteem in front of the host populations. The vulnerable group of the society, especially women becomes worst victims of marginalization due to several gender based discrimination.

2.4.5 From Food Insecurity to Adequate Nutrition: Although food security depends on providing economic assistance, i.e., land and employment in the long run, yet in the very short run it depends on providing nutritious food relief by the government, NGOs or civil societies.

Food security could be provided through a strategy for restoration of sustainable livelihood as a basis for rehabilitation that would enable the displaced to grow more food if the land-for-land option is pursued or if the resettlers are given means to enhance their purchasing power to buy and consume food through employment and income generating schemes.[44]

The restoration of livelihood has been a key problematic aspect of rehabilitation. In order to solve this, the R&R units are systematically identifying displaced families living below the poverty line in order to retrofit their rehabilitation with additional financial support and linkage with other sources of funds such as the Integrated Rural Development Programme (IRDP) and banks.[45]

[44]Fernandes, Walter(2000*) " From Marginalisation to Sharing the Project Benefits.*" In M. Cernea and C. McDowell (eds.) Risk and Reconstructing Livelihoods, Washington, DC: The World Bank, P. 108.
[45]Cernea, Michael M (1988) *"Involuntary Resettlement in Development Projects: Policy Guidelines in World Bank-Financed Projects.*" World Bank Technical Paper No. 80, Washington, DC.: World Bank, pp: 78-79.

2.4.6 From Increased Morbidity and Mortality to Better Health Care:

A World Health Organization (WHO) study of four countries in the lower Mekong basin (Thailand, Vietnam, Laos, and Cambodia) showed that the most effective long-term strategy for reducing the adverse health impacts of dam reservoirs is institution building in the health and sanitation sectors. The study recommended that all four countries incorporate 'a human health component into all integrated river basin development projects' as a safeguard against higher risks of morbidity and mortality. Togo's Nangbeto Dam project offered a replicable example of such good practice: It introduced a continuous health-monitoring studies program throughout the construction years. This helped to protect the resettlers' and host population's health.[46]

In India too, the World Bank has completed a study to assess the health implications of involuntary R&R in developmental projects through the Society for Health Education and Learning Packages (HELP). The study covered eight projects.[47]

The study indicates that involuntary resettlement adversely affects the health status of the community, which is a sensitive indicator of development. In as much as the health status study of the affected families will help to formulate strategies to prevent adverse impacts and promote health of the resettled, it has recommended a baseline survey to determine the 'level of living' of the families to be displaced. It has also suggested guidelines for assessing the health status of the community along with strategies to enhance the nutritional status of

[46] Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing, P. 37.

[47]Thangaraj, Sam (1998)*"Addressing Impoverishment Risks: Some Examples from World Bank-assisted Projects*." In H.M. Mathur and D. Marsden, (eds.) Development Projects and Impoverishment Risks: Resettlement Project-Affected People in India, Delhi: Oxford U.P., pp: 87-88.

the children. This should provide a basis for addressing the risk of increased morbidity and mortality through the R&R action plan.[48]

The findings of this study and its recommendations need to be taken seriously so that necessary action can be taken at least in projects that are in the pipeline.

2.4.7 From loss of access to Common Property Resources to Restoration of Community Assets/Services:

The government, project designers and policy makers tend to neglect the restoration of common property resources (CPR) in compared to restoration of individual land, livelihood and house. Hence, this part requires more attention, because, in re-articulation and reintegration processes, common cultural values can overcome material deprivations, economic disadvantage, and inadequate physical provisions.[49]

The picture is not so gloomy. We have successful stories of resettlement planning in terms of access to CPRs in different parts of the globe. The Upper Indravati hydroelectric project is one example which exemplifies the importance of access to CPRs to a displaced community. The government of Odisha has planned to resettle the displaced in the command area of the project so that they could enjoy the benefits of irrigation. Nevertheless, the displaced families as a community decided to resettle in clusters closer to the forest to

[48] ibid.

[49] Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing, P. 35.

enable them to have access to timber and non-timber produce. After the resettlement, 91% have access to fuelwood, 71% to fodder, 63% to timber, and 56% to non-timber produce.[50]

Some of the most interesting experiences in the deliberate preservation of community structures or assistance for the formation of new community networks are reported from China, Ethiopia, Greece, and Mexico. By law, project authorities in China must negotiate with displacees simultaneously as individuals and as community groups. The government resources for financing resettlement are divided in some proportion between households (for individual family purposes) and community bodies represented by township committees (for group purposes). Community-owned assets lost in displacement are valued and financially compensated by the state to enable the reconstruction of the same, or of comparable, community assets, which contribute to the livelihoods of resettlers. Furthermore, the Chinese approach is also unique in that it fosters community solidarity in sharing some of the losses (particularly land) and requires some redistribution of non-affected village lands used by the non displaced farmers to the village members who are displaced and lost land.[51]

2.4.8 From Social Disarticulation to Community Reconstruction:

Social disarticulation is less measurable than landlessness and economic marginalization, but nevertheless real and profound. This part requires more sensitivity from the project designers. In many instances, the age long cultural beliefs, customs and norms of a community had collapsed in the name of 'development'. The government should make all possible attempts to resettle the whole community in one site rather than scattered

[50] Ravindran, Latha (1995) *"Socio-economic Study of Displaced Persons under Upper Indravati Project, Orissa",* Xaiver Institute of Management, Bhubaneswar, P. 61.
[51] Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing, P. 35.

relocation. It is not acceptable to extinction of any cultural faith or practices due to 'national development'.

2.5 LIMITATIONS OF THE IRR MODEL:

Although the IRR model has been widely accepted and practiced in many resettlement policies as well as resettlement research throughout the globe, yet the model has its own limitations. In spite of giving equal emphasis to almost all socio-cultural and economic aspects of the uprooted people, the model has failed to look at some very basic requirements of the project affected people.

Scholars from different regions of the globe at different points of time (mostly after 1990s), has contributed by adding new impoverishment risks to the Cernea's list of impoverishment risks from their own experiences.

Amongst them, Theodore Scudder has raised the risk of loss of resiliency in 1997. The term 'resilience' refers to 'elasticity', i.e. the power of springing back. Scudder believed that 'every community has the capability to deal with any emerging economic and social shortfalls', but this coping capacity has been severely affected in case of project uprooted people.[52]

L.K. Mahapatra has talked about loss of education in 1999. Due to acute financial shortage, many uprooted family cannot even think of sending their children to school for achieve education. In families where there are many children, some of them are allowed to attend schools while the others have to take the burden of family responsibilities. The issue of

[52]Scudder (1997*) "Social Impacts and Resettlement*", In: Asit K. Biswas (Eds), Water Resources: Environmental Planning, Management and Development, New York: McGraw Hill, P. 23.

gender discrimination has become paramount in this respect. Again, in many relocation sites there is no provision of schools or teachers. The loss of education has created a generation of dull and ignorant people and pushed them into the state of acute poverty.[53]T. Downing has brought the issue of loss of all kinds of human rights- economic, social, political and cultural due to improper resettlement policy. [54]

Moreover, Andnet Gizachew has criticized IRR model for overlooking 'cattle economy' and giving more emphasis on 'crop economy'. According to A. Gizachew, Cernea showed his unwillingness to put 'cattle economy' even in the list of common property resources, although the fact is that bulk of rural economy of developing regions depend upon generating income from milk and milk products. Cernea has identified loss of access to common grazing lands as one of the impoverishment risks under the category of 'loss of access to common property resources', but Michael. M.Cernea has nowhere written that lack of impoverishment risk of 'cattleness' has come in front of A. Gizachew when he decided to make an empirical study on Tekeze dam of North East Ethiopia. Like other third world countries, in Ethiopia too, a farmer has been ranked as rich, middle or poor based on the cattle that he has possessed. The farmer who possesses more number of cattle can also control some social institutions like marriage. This 'cattle economy' was virtually come to an end as large number of grazing lands has been submerged due to Tekeze hydroelectric dam. Apart from creating economic marginalization, the crisis in cattle economy has created some social problems to the project affected people. In order to search new grazing land

[53]Mahapatra LK (1999) *"Testing the Risks and Reconstruction Model on India's Resettlement Experiences*", In: Cernea, M. (Ed), The Economics of Involuntary Resettlement: Questions and Challenges,.Washington, DC: World Bank, pp. 189-230

[54]Downing T (1996) "*Mitigating Social Impoverishment when People Are Involuntarily Displaced",* In: C. McDowell (ed.), Understanding Impoverishment: The Consequences of Development-Induced Displacement. Oxford: Berghahn Books, pp. 33-47.

they have to migrate somewhere else and this unwanted migration may create conflicts between the host communities and the uprooted people.[55]

The IRR model is silent about loss of access to transportation due to construction of dams as the crossing paths are used to submerge by the water of the dam. Lack of transportation has both economic as well as social implications. Lack of transportation prevents farmers from bringing their farming products and cattle economy to the local market. Due to submerge of crossing paths, the age long cultural and social relationships among people of both sides of the river will invariably come to an end.[56]

2.6 SIGNIFICANCE OF THE IRR MODEL:

In spite of the above mentioned limitations no one can deny the great significance of the IRR model in the resettlement literature, research and policy. Prior to IRR model, there was no such model of resettlement which encompasses almost all dimensions of the project affected people both in theory as well as in practice. Michael M. Cernea has applied his IRR model on almost 200 World Bank's funded projects all over the world during last decade of the twentieth century. The empirical studies have established viability and feasibility of the IRR model.

The best part of the IRR model is that Michael Cernea has not made it a 'fixed' framework of resettlement. He has welcomed scholars from different regions of the globe to contribute towards IRR model from their empirical studies on dams induced displacement.

[55] Gizachew, A (2015) *"Refining the impoverishment risks and reconstruction (IRR) model: A study of the model's "overlooked"* risks, evidences from the impacts of Tekeze Dam, North East Ethiopia", Journal of Development and Agricultural Economics, P. 4-6.
[56] ibid.

The beauty of IRR model lies in its adaptation of holistic approach. It captures not only economic but also social and cultural impoverishment, underlining the fact that displaced people lose natural capital, manmade capital, human capital, and social capital.[57]Cernea is emphatic that his conceptual construct is not limited to cognitive purpose alone, but has operational implications as well. It is an effective tool for preparing, planning and managing the implementation of development projects that involve resettlement, in a manner that will avoid or mitigate the poverty risks.[58]

It is also a warning model. It alerts those responsible for the planning and management of resettlement operations to the kind of targeted actions that are needed. The risks can be minimized if they are seen as risks in the first place. Their threat will diminish or even disappear altogether if they are foreseen and appropriate action taken to deal with them well in time.[59]

2.7 CONCLUSION:

We cannot conclude the discussion of IRR model without referring its popularity in recent resettlement literatures as well as resettlement research practices all over the world. The model has been widely applied by many scholars in conducting their research on hydroelectric projects funded by the World Bank, the Organizations for Economic Cooperation and Development (OECD) countries, the Asian Development Bank, etc.

[57] Mathur, Hari Mohan (1998) "*The Impoverishment Risk Model and its Use as a Planning Tool*" published in the book 'Development Projects and Impoverishment Risks: Resettling Projects-Affected People in India, edited by Hari Mohan Mathur and David Marsden, Oxford University Press, Delhi, P.69.

[58] ibid
[59] ibid

The resettlement research scholars of India also have extensively applied IRR model in conducting their research on resettlement and rehabilitation of the project affected people. The sound theoretical knowledge of the IRR model helps the researcher to frame correct methodology, technique of data collection as well as hypothesis. The strong theoretical base will invariably lead to a better field investigation. The researcher can provide policy alternatives to the government or public bodies, the knowledge of which they have collected from their extensive field survey as well as theoretical base of IRR model.

The scholars like Walter Fernandes, L.K. Mahapatra, Sam Thangaraj, Hari Mohan Mathur, L. Ravindran, S.Parasuraman, M.Basu etc have discussed on IRR model in the Indian context. Among them, Walter Fernandes has extensively studied the applicability of IRR model in the context of North East India. He has founded an autonomous research centre in Guwahati, Assam, named as North Eastern Social Research Centre. The centre is completely devoted to the study of dam uprooted people and their proper rehabilitation and resettlement in North eastern region of the country.

Likewise, the Institute for Socio-Economic Development (ISED) in Orissa, India took IRR model as its conceptual and methodological basis in exploring resettlement processes caused by seven major projects (in dam construction, thermal plants, mining and industry). The sample included 31 villages and 441 households with 2274 people. The study produced one of the most integrated and comprehensive survreys of displacement impacts published to date in India, practically confirming the framework under the demands of a large scale field

investigation. Its key findings are structured along the model's impoverishment risks.[60] The IRR model is used to achieve an effective and appropriate Resettlement and Rehabilitation (R&R) of the displaced by consciously counteracting the anticipated and predictable risks both by managers and the displaced, it is also an universal tool for sustainable R&R of the displaced.

---

[60] Cernea, Michael (1990) "*Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement"*, The paper is presented to the UN Symposium on Hydropower and Sustainable Development, Beijing, P. 48.