

REVIEW OF RECENT STUDIES ON HOUSEHOLD LIVELIHOOD SECURITY

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Abstract

The main objective of this paper is to review the recent studies on household livelihood security. The review has been structured around the components of the livelihood Security Framework used by various researchers. In the last two decades, various institutions have explored and developed the household livelihood security approach. Some researchers used descriptive and path analysis to measure livelihood security. At the same time, other scholars conducted quantitative and qualitative methods in their studies. Indices and econometric models have also been developed and tested for livelihood security. Many broad dimensions such as economic security, food security, health security, educational security, social security and empowerment were used in household livelihood security analysis. A composite index for measuring livelihood security was used in some studies. The household livelihood index approach is broadly used to measure the Household livelihood status in many research studies.

Keywords: livelihood security, economic security, food security, health security, social security

Introduction

The concept of livelihood is relatively new and re-emerging. During the 1990s, the livelihoods approach emerged as a new way of thinking. Livelihood Security is an interdisciplinary concept that focuses on investigating the barriers people face in living their day to day life, especially marginalised ones (DFID, 2000; Chambers, 1992). The concept of livelihood is widely used in poverty and rural development debates. Many scholars have defined and used the concept of livelihood security in their studies. It is evolving, and there are many definitions in the literature, some very similar and others noticeably different—the main objective of this paper is to review the recent studies on household livelihood security.

Household Livelihood Security

In the 1970s, food security was primarily considered national and global food supplies (Frankenberger, 1992). Thus, the evolution of the concepts and issues related to household food and nutritional security led to the development of household livelihood security. Household livelihood security is defined as adequate and sustainable access to income and resources to meet basic needs (including sufficient food, potable water, health facilities, educational opportunities, housing, time for community participation and social integration). Household livelihood security is defined as adequate and sustainable access to income and resources to meet basic needs, including fair access to food, potable water, health facilities, educational opportunities, housing, time for

community participation and social integration. In the past several years, much conceptual progress has been made in the processes of household livelihood insecurity. CARE international officially adopted household livelihood security (HLS) as a programming framework in 1994. Over the past five years, CARE has been working to institutionalize the approach in its programming worldwide. Resources and Assets are means to achieve livelihood security. These assets are sources of livelihood and are affected by historical trends and seasonality. People require to arrange for assets to achieve their self-defined goals. Chambers and Conway (1992) grouped livelihood assets into social assets and material assets such as land, natural resources, infrastructure, livestock and equipment. However, The DFID (2000) frameworks break livelihood assets into five types of capital such as 1. **Human Capital:** In development studies, human capital is a very widely used term with various meanings. However, in the context of sustainable livelihood analysis, it is defined as “Human capital represents skills, knowledge, the ability to labour, and good health status that enable people to pursue different livelihood strategies and achieve their livelihood objectives”. It varies according to the household size, skill level, leadership potential, and health status (Kollmair & Gamper, 2002). 2. **Social capital** can be defined as “social resources which people draw upon to pursue their livelihood objectives”. It includes social networks, associations to which peoples belongs. This is about the quality of relations among people. Narayan et al. (1999) report that rural peoples stated that their most important asset was an extended and well-placed family network. They could drive jobs, credit and financial assistance. Social capital is a two-way process. Social networks provide access to scarce resources, and membership enables poor people to meet everyday needs. 3. **Natural capital** is the natural environment that provides many assets that can be converted to resources such as rain, water, air, land, river, forest, plants and animals and birds. It also refers to natural resource bases, including marine resources, woodland and forest products. Nature provides material for food production, living space, supply of energy and other materials for livelihood. It also provides a healthy environment for a healthy life for the people. 4. **Physical capital** means man-made assets. It includes equipment, shelter and infrastructure (such as road network, electricity, hospitals, communication and schools, clinics, dams, water and sanitation services, and information sources such as telephones, radio, television and the Internet). Physical assets are essential for people to carry out livelihood activities. 5. **Financial capital** includes all types of financial resources available to the people, and it is one of the essential assets in the sustainable livelihood framework. Many scholars note that all other livelihood capitals depend on financial capital as they can be converted into different types of capital or used directly to achieve livelihood outcomes. For example, they are purchasing food to reduce food insecurity. Financial capital includes income, remittances from family members working away from home, sources of credit, pensions, savings, cattle, stores of seed, crops, food.

Livelihood security research is re-emerging issue in regional development debates. Measuring livelihood security at the household level is hardly new. This approach evolved from thinking about the root causes of food insecurity. Frankenberger & McCaston (1998) described that the research work carried out in the late 1980s and early 1990s indicated food security that they were currently considered needed to be broadened because food is only one of the range of factors that determined household decisions. Akter (2012) noted that this approach evolved from Sen’s (1981) theory on entitlement. Entitlement refers to the income and resource bundle set over which households can establish control and secure their livelihood. Livelihoods are secure when households have secure ownership to, or access to, resources and income-earning activities, including reserves and assets to offset risks. Livelihood security, in simple words, is the option on how households and communities make a living. In general, livelihood security means security in providing basic human needs such as food, clothing, shelter, education and health. The livelihood security analysis’s main purpose is to understand local livelihood systems and socioeconomic conditions along with constraints, vulnerability, marginalization, and risk of people.

Many institutions like the International Food Policy Research Institute (IFPRI) and scholars have developed livelihood security frameworks in the last two decades. Various scholars have interpreted livelihood security in different ways. However, most of the definitions of livelihood security were derived from Chambers and Conway's work (1992). They defined livelihood security as: "Livelihoods are secure when households have secure ownership of, or access to, resources and income-earning activities, including reserves and assets, to offset risks, ease shocks and meet contingencies". Furthermore, "A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation" (Chambers and Conway, 1992). Frankenberger (1996), as summarized by Lindenberg (2000) defined that "Household Livelihood Security is defined as a family or community's ability to maintain and improve its income, assets and social well-being from year to year the relief to rehabilitation to development continuum". Frankenberger & Mc Caston (1998) defined household livelihood security as "Adequate access to income and resources to meet basic needs including adequate access to food, potable water, health facilities, education opportunities, housing, time for community participation and social integration". They stated that the concept of household livelihood security allows for a more comprehensive understanding of poverty, malnutrition and the dynamic and complex strategies that rural households use for survival.

Moreover, Frankenberger et al. (2000) put livelihood security in simple words as, "Livelihood security refers to the ability of households to meet its basic needs. These needs include adequate food, health, shelter, minimum level of income, basic education and community participation". Centre for Assistance and Relief Everywhere (CARE) is an international NGO that officially adopted Household Livelihood Security (HLS) as a programming framework in 1994. It uses the Chambers and Conway (1992) livelihoods definition. It identifies three fundamental attributes of livelihoods: Possession of human capabilities, Access to tangible and intangible assets, and economic activities. According to CARE's definition, "Household livelihood security is defined as adequate and sustainable access to income and resources to meet basic needs including adequate access to food, potable water, health facilities, educational opportunity, housing, time for community participation and social integration" (Drinkwater and McEwan, 1992). CARE's household livelihood security model includes various components such as Educational, Shelter, Water, Health, Food, Nutrition securities and Community participation. Shyamalie & Saini (2010) stated, "Livelihood security has been understood to incorporate ownership or access to resources and assets to offset risk, ease out of shocks and meet contingencies". At the same time, livelihood has been termed as an adequate flow of resources to meet people's basic needs. Livelihood security is about a sustainable socio-economic, cultural and political system and its constraints, vulnerabilities, marginalization and risk.

Many studies assessing livelihood security were available in the literature. Since the nineties, many scholars and institutions have attempted to develop methodologies to analyse livelihood security across the globe. CARE has contributed more to this process and conducted 50 household livelihood security studies in 40 countries (Lindenberg, 2002). Chambers (1989), Redelift (1990), Long (1997) and Hug (2000) defined the concept of household livelihood security at length.

CARE, Kenya (1996) firstly assessed the livelihood security in Kenya, using the livelihood security index. They empirically constructed livelihood security Indices such as health, education, food and economic security. They have compiled a number of different indicators under health security, educational security, food security and financial security. David (1999) submitted a report on "Household Livelihood Security in Urban Settlement". This report highlighted some conceptual definitions and meanings of household livelihood security. Description for livelihood security, characteristics of household livelihood security.

Frankenberger, Drinkwater, Maxwell (2000) conducted a significant study on livelihood security in 2000. The Paper shows how livelihood concepts and tools have been considered in strategic planning, diagnosis, design, implementation, monitoring, reformulation and evaluation. Household Livelihood Security continues to be the cornerstone framework that CARE uses to carry out its programming efforts. It allows CARE to have a more holistic view of the world to inform our programming decisions, enabling the organization to understand the root causes of poverty better. In addition, it helps to identify opportunities and leverage points for positive change. Application of the livelihood framework should not be considered a linear process but rather a flexible, dynamic and iterative process over time. Taking a holistic view does not always mean undertaking multiple interventions.

Measuring livelihood Security

Rahman & Alam (2001) conducted a baseline survey on livelihood security of vulnerable urban households in Slums and low-income settlements within the municipal areas of Jessore and Tongi in Bangladesh. The household survey method was employed in the study. The study highlighted that the incidence of divorce, separation, abandonment, and being a widow is remarkably high in female-headed households in both cities. The vulnerability of female-headed households requires broader family support for their livelihood security.

Mtshali (2002) studied the Household Livelihood Security in Rural Rkwa Zulu-Natal, South Africa. The study aimed to investigate the rural household structure and processes related to rural livelihood security, the appropriateness of the household concept in examining rural livelihood security, and the importance of gender and indigenous knowledge systems to the agricultural extension services in support of rural livelihood security. The study also found the role of agricultural extension in enhancing rural livelihood security. This study used quantitative and qualitative research methods because they complement each other. The descriptive survey was undertaken to quantify data, whereas qualitative methods were used to collect data from key informants, focus group discussions and case studies. Because of the findings of this thesis, the household, whether or not in the form of the homestead, is the significant entry point for enhancing rural livelihood security. It should be given more attention in promoting economic growth, social development and eradication of vulnerability and poverty.

Rahmato & Aklilu (2002) published a discussion paper on "Insecurity among Urban Households in Ethiopia. This study was conducted based on a survey of households undertaken in the last quarter of 2001 for ILO as part of the People's Security Survey project. The main objective of the People's Security Survey was to capture people's perceptions and normative values of "livelihood" security. The study consists of a research framework developed by ILO focusing on poverty, labour market experience, and access to social protection policies and institutions of representation. The main instrument employed here was an extensive questionnaire administered initially in urban areas.

Ahmed Ali (2005) completed Livelihood and Food Security in Rural Bangladesh: The Role of Social Capital. This research raises and tries to answer questions about household livelihood, food security, and vulnerability in a rural area in Bangladesh. This research attempts to link quantitative to qualitative data to get detailed insights into livelihood strategies and social capital developing over time to attain livelihood and food security among the households in the study area. He used the case study method.

Ganeshkumar et al. (2009) researched livelihood security in Andaman. This study was carried out to make the socio-economic impact assessment of livelihood security in agriculture, animal husbandry and aquaculture on the tsunami-hit lands of Andaman. A survey has been conducted for two periods, pre-tsunami and post-tsunami. The results have indicated that the tsunami has ravaged the households, standing crops, farm inputs such as seed, feed and implements, livestock and poultry population, their sheds, fishponds, etc., thereby affecting the basic

livelihood security of the people in Andaman. The rehabilitation measures taken by the government and NGOs have improved their livelihoods by reviving agriculture considerably in the subsequent years and by creating employment opportunities in various farm and non-farm activities. The Paper has suggested creating profitable livelihood security to vulnerable sections of the society in the existing socio-economic penury with the holistic intervention of the community, government and NGOs.

In 2010, Shiyamalie & Saini (2010) had conducted a research study on the livelihood security of women in hills. This study attempts to assess and compare different livelihood security outcomes influencing the livelihood security of women in similar agro climate tea growing areas of Kangara district of Himachal Pradesh and Nuwara Eliya district of Sri Lanka. This research uses the model developed by CARE to assess the livelihood security of women in two districts. The results suggest a low vulnerability of women to habitat security compared to other aspects of livelihood security in both study districts. The overall livelihood security index reveals that one-fourth of the women in the Kannkara district is under the low livelihood security trap that is a matter of great concern.

Rajasenan & Rajeev (2012) studied the Livelihood Security of Traditional Fishermen of Kerala: the study's main aim is to analyze and identify the roles of self-help groups in the livelihood security of traditional fishers. Socio-economic variables have been used in this study.

Larsen (2012) investigates rural households' livelihood security in Rwanda. It uses a case study approach. Both quantitative and qualitative methods have been used. Empirical data has been collected in the rural highlands of west Rwanda. The theoretical framework focuses on livelihoods sustainability and security. This research touches upon the socio-economic aspects of households' livelihoods. The research operates with an approach that analyses rural livelihoods in the highlands of West Rwanda. From the case study, it is found that sustainability is derived from diversified livelihood strategies.

Chinnadurai, Nalini & Suwaminathan (2012) have published a research paper on Livelihood Security Status in the Dryland areas of Bellary District of Karnataka. The specific objective of the study was to identify the existing agricultural and non-agricultural activities followed in the dry land areas to construct the livelihood security index and analyze the best option available for ensuring livelihood security. This paper attempted to analyze the livelihood security status of the two dry-land taluks, Hadagali and Kudligi, in the Bellary district of Karnataka. The paper's objective is to construct the livelihood security index of the households. To estimate the livelihood security status, the following components were included: income and assets, food and nutrition, education, participation, water, sanitation, primary health and reproductive health. Each of these components was identified separately in the study area, and an aggregate measure of livelihood security was derived. The appropriate weights were given to each of these indicators. The study calculated livelihood security based on educational security, women empowerment, health security, food, nutritional security, and economic security.

Rahman and Akter (2012), in their study on Determinants of Livelihood Security in a poor settlement in Bangladesh, measured livelihood security in a selected village in Bangladesh. The Paper applies a quantitative approach to measure and identify household livelihood security status determinants in poor urban settlements of two cities in Bangladesh. Indices were computed for five areas: economic, food, health, education, and empowerment using a large set of socio-economic characteristics of the households.

Akter (2012) contributed to the literature on livelihood security through the research paper on “investigating Livelihood security in poor settlements in Bangladesh. This paper examines the factors associated with different

areas of livelihood security at the household level using a simultaneous equation system. The approach is novel to identify the targeted area of intervention to improve the livelihood security level of poor households. This study used extensive quantitative data on the outcome indicators of livelihood security and suggested programme improvement for poverty reduction based on evidence. An increasing number of organizations are now engaged in collecting this type of data and would benefit from the methodology and analysis in this paper. The Paper is organized to measure the components of livelihood security such as economic, food, health, education and empowerment.

Mahadik & Sawant (2012) conducted a study on the livelihood security of tribal people in the thane district of Maharashtra, India. The study was conducted in two backward tehsils, namely Jawhar and Vikramgad of Thane district of Konkan region, by personal interviewing of tribal farmers. The study's specific objectives were to study the livelihood security of farmers of backward districts and the factors affecting the livelihood security of farmers of backwards districts. Major occupation showed a negatively significant relationship with livelihood security, while economic motivation had a positively significant relationship with the livelihood security status of the respondents.

Research has been conducted on "Rural Livelihood Security: Assessment of Fishers' Social Status" in India. The study has evaluated the levels of literacy, health, income and livelihood security of the fisherfolk in India by taking a sample of fisher households selected from six fisheries sectors. The primary data were collected using a pre-tested survey. It found that the respondent households have diversified their income sources beyond fisheries for better livelihood security. The study has suggested that microfinance enterprises like self-help groups should be promoted to help the fishers address their indebtedness problem (Shyam et al., 2013).

Karuna Jeba Mary & Karthikeyan (2013) completed an assessment of livelihood security of self Help Group women entrepreneurs in the Tank system in Theni district, Tamil Nadu. Data were collected through interview and focus group interviews. The livelihood security index method was used to analyse the collected data.

Recently, Otunaiya & Ibidunni (2014) studied the determinants of food security among the farming households in the Ogun State of Nigeria. It examined the sustainability strategies adopted by the sampled household to sustain their livelihood and food security status. The food security index and logit regression method were used to analyse the collected data.

Madhuri & Bhowmick (2014) completed research on Livelihood vulnerability index analysis: An approach to studying vulnerability in the context of Bihar to identify the variability in vulnerability of affected households and the livelihood vulnerability index. To identify the variability in vulnerability of affected households, the livelihood vulnerability index of Hahn, Riederer and Foster was modified according to the context of the study area. Ngwa & Balgah (2016) conducted research to identify determinants of livelihood security in the Lake Nyos area. In rural Cameroon, A probit analysis was used to identify the determinants of livelihood security in the research area.

Meekaew & Ayuwat (2019) very recently completed the research employed quantitative methodology to examine the factors that influenced the livelihood security among fishing migrant households. The analysis was based at the household level, and the research applied descriptive statistics and path analysis to examine the factors that influenced livelihood security. Livelihood security assets were used in this study.

Pradhan, Naberia, Harikrishna, & Jallaph (2020) have used the livelihood security index (LSI) developed by Baby (2005) To measure the livelihood security of the respondent's household. In this study, seven different livelihood security identified such as Household food security, occupational security, habitat security, health security, environmental security, social security, and educational security. Those dimensions are weighted based on their perceived significance in determining the livelihood security of the rural household. Thi research study was conducted in the Shahpura block of district Jabalpur in Madhya Pradesh with small farmers to analyze their livelihood security.

Conclusion

The objective of this review was to bring together the various methodologies, tools, and indicators applied to household livelihood security analysis by scholars. Understandably, the idea of livelihood security at the household level is hardly new. There is a number of methods applied to quantify the living standard of people at the household level. Similarly, the household livelihood security approach has been explored and developed by various institutions like the International Food Policy Research Institute (IFPRI) and CARE in the last two decades. A wide range of techniques has been even further refined after the 1990s. Some researchers used descriptive and path analysis to measure livelihood security. Some other scholars conducted quantitative and qualitative approaches in their studies. Indices and econometric models have been developed and tested to determine factors that contribute to livelihood security. Lindenberg (2002) analyzed livelihood security under five broad dimensions: economic security, food security, health security, educational security, and empowerment by computing livelihood security indices. Akter and Rahaman (2012) used a composite index for measuring livelihood security. The household livelihood index approach is broadly used to measure the Household livelihood status in many research studies.

References

- Ali, A. (2005). Livelihood and Food Security in Rural Bangladesh: The Role of Social Capital. Ph.D. Wageningen University.
- Akter, S. (2012). Investigating livelihood security in poor settlements in Bangladesh. In: 86th Annual Conference of the Agricultural Economics Society. United Kingdom: Agricultural Economics Society.
- Baro, M. (1996). Household Livelihood Security: Theories, Practice, and Perspective. Ph.D. Department of Anthropology, University of Arizona.
- Chambers, R. and Conway, G. (1992). Sustainable rural livelihoods: Practical concepts for the 21st century. Brighton, England: Institute of Development Studies.
- Chambers, R. (1989). Editorial Introduction: Vulnerability, Coping, and Policy. *IDS Bulletin*, 20(2), pp.33-40.
- Chinnadurai, M., Nalini, T. and Swaminathan, B. (2012). Livelihood security status in the dry land areas of Bellary District, Karnataka. *International Journal of Science and Nature*, [online] 3(4), pp.857-862. Available at <http://ssrn.com/abstract>.
- David, S., (1999). Household livelihood security in urban settlement, Technical and Policy Unit, CARE International, UK.
- DFID, (2000). Sustainable Livelihoods Guidance Sheets. [Online] Department for International Development, pp.1-26. Available at: http://www.livelihoods.org/info/info_guidancesheets.html [Accessed 23 Jul. 2013].
- Drinkwater, M. & MC Ewan, M., (1992) Household food security and environmental sustainability in farming system research: developing sustainable livelihood, Paper presented to the Adaptive Planning Research Team by annual review meeting Mangu, Zambia 13-16 April
- Frankenberger, T., Drinkwater, M. and Maxwell, D. (2000). Operationalizing household livelihood security: A holistic approach for addressing poverty and vulnerability. Program Document, CARE USA. Atlanta, GA: CARE

- Frankenberger, T.R. (1996). Measuring Household Livelihood Security: An Approach for Reducing Absolute Poverty. In: Food Forum -24. Washington, D.C, U.S.A: Food Aid Management.
- Frankenberger, T.R., & M.K. Mc Caston. (1998). The Household Livelihood Security Concept, CARE, USA, [online]. Available: www.fao.org/doc.rep [Accessed 2012-08-10]
- Frankenberger, T.R., Drinkwater, M. And Maxwell, D. (2000). Operationalizing Household Livelihood Security: A Holistic Approach for Addressing Poverty and Vulnerability [online]. Available from: www.pqdl.care.org/practice [Accessed 2012-08-06]
- Frankenberger, T.R., & Mccaston, M.K. (1998). The household livelihood security concept. Food, nutrition and agriculture, 30-3
- Ganesh Kumar, B., Sendhil, R., Venkatesh, P., Raja, R., Jayakumar, V., and Jeyakuma, S. (2009). Socio-Economic Impact Assessment of Livelihood Security in Agriculture, Animal Husbandry and Aquaculture on the Tsunami Hit of Andaman. Agricultural Economics Research Review, 22, pp.483-494
- Jeba Mary, K. and Karthikeyan, C. (2013). Assessment of livelihood Security of SHG women Entrepreneurs in Tank System. International Journal of Extension Education, 9, pp.15-18
- Kollmair, M., and ST.Gamper, J. (2002). Sustainable Livelihood Approach. [Input Paper] Integrated Training course of NCCR, University of Zurich Development Study Group, National Centers of Competences in Research. Switzerland
- Lindenberg, M. (2002). Measuring Household Livelihood Security at the Family and Community Level in the Developing World. World Development, 30(2), pp.301-318.
- Mahadik, R. & Sawant, P., (2012). Livelihood Security of Tribal People in Thane District of Maharashtra. Rajasthan Journal of Extension Education, Volume 20, pp. 39-43
- Madhuri., Tewari, H. and Bhowmick, P., (2014). Livelihood vulnerability index analysis: An approach to study vulnerability in the context of Bihar. Jambá: Journal of Disaster Risk Studies, 6(1).
- Meekaew, N., & Ayuwat, D. (2019). Factors Influencing Livelihood Security among the Fishing Migrant Households at Places of Origin in Thailand. International Journal of Recent Technology and Engineering (IJRTE), 1573-1579
- Mtshali, S. (2002). Household Livelihood Security in Rural Kwa-Zulu Natal, South Africa. PH.D. Wageningen, The Netherlands: Wageningen University.
- Narayan, D., Pate, J., Schafft, J., Rademacher, A. and Koch-Schulte, S. (1999). Can anyone hear us? Voices from 47 Countries, Voices of the poor. Washington, DC: World Bank.
- Ngwa, K., & Balgah, R. (2016). Determinants Of Livelihood Security Among Disaster Victims In Rural Cameroon, *International Journal of Recent Scientific Research*, Vol. 7, Issue, 1, 8328-8334.
- Otunaiya, A., & Ibidunni, O. (2014). Detraminants of Food Securirty among Rural Farming Households in Ogun State, Nigeria. Journal of Sustainable Development in Africa, 16(6), 33-44
- Pradhan, S., Naberia, S., Harikrishna, Y., & Jallaraph, V. (2020). Livelihood Security of Small Farmers in Jabalpur District of Madhya Pradesh. *Indian Journal of Extension Education*, Vol. 56, No. 4, 98-102
- Rahman, S. and Alam, M. (2001). Baseline survey report: Livelihood security analysis of vulnerable urban households, Jessore and Tongi, Dhaka, Bangladesh. Bangladesh: SHAHAR project, CARE.
- Rajasenana, R. and Rajeev B, R., (2011). Livelihood Security of Traditional Fishermen of Kerala: Analysing and Identifying the Roles of Self Help Groups. Indian Journal of Applied Research, 1(7), pp.67-70.
- Rahmato, D. and Aklilu, K. (2002). Livelihood Insecurity among urban households in Ethiopia. Discussion paper No 8. Addis Ababa: Forum for Social Studies, pp.1-53
- Rahman, S. & Akter, S., (2012). Determinants of livelihood security in poor settlement in Bangladesh. Edinburgh,UK, Agriculture Economic Society,Royal Agriculture College.
- Sen, A. K. (1981). Poverty and famines. Oxford, UK, Clarendon
- Shyamalie., H. and Saini, A. (2010). Livelihood Security of Women in Hills: A Comparative Study of India and Sri Lanka. Indian Journal of Agricultural Economics, 65(4), pp.1-12.

Shyam,S.S. R. Sathiadhas, R. Narayanakumar, P.K. Katiha, M. Krishnan, R.S. Biradar, Nikita Gopal, Nagesh Barik & B. Ganeshkumar.,(2013). Rural Livelihood Security: Assessment of Fishers' Social Status in India, *Agricultural Economics Research Review*, 26, pp 21-30