Development Discourse and Innovation Debating the Role of Grassroots Innovation in India

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ABSTRACT

Since the independence inclusive development of the society is the stated aim of the Indian policy. However, types of strategies and rules implemented in the past and present for the inclusive development there are many challenges faced by the government. There are many vulnerable populations and poor people which are not formally registered under local laws so the government does not ensure their inclusion in the inclusive development process, even not able to improve their condition of life. Innovation plays an important role in the development of the society. There are also many social local social problems which are faced by the rural people but not registered under the inclusive development process. Rather than depending upon the government schemes and policies some individuals and communities are making some innovations to solve the problems they faced in their daily life. The innovators are saying no to the government programs because they earn more money from this innovation and can make their development. So in recent times, grassroots innovation is considered as inclusive innovation. This paper examines the factors and basic local problems, because of that grassroots innovation cannot become inclusive in nature. Further discussion in on that can we consider or not grassroots innovation as inclusive innovation without overcoming such problems.

Key Words : Grassroots innovation, Inclusive innovation, Inclusive development, Innovators, Caste, Gender discrimination

INTRODUCTION

As a developing country in India, one of the most important goals of socio-economic development is Inclusive development (Gupta, 2012). During the pre-liberalisation period, from the 1950s to the 1990s the main focus of the inclusive policy was in rural India (Ramani and Szirmai, 2014). Grassroots innovation, Inclusive Innovation and Inclusive development are interrelated concepts and they make an effect on each other they also use alternatively. So first here we try to clarify these terms and their concepts. Different scholars and authors gave the different explanation about the grassroots innovation. According to A K Gupta (2015), 'Grassroots innovation is the innovation of the uneducated people (without a professional Degree), who are self-employed outside the formal sector and develop their innovation completely without any outside help from formal institutions and organizations'. Hilmi (2012) gave a definition of innovation. According to him, "innovation is defined as innovative product or process created at the bottom of the pyramid, usually due to necessity, hardship and challenges". Human responding hardship and difficulty in life can easily become accidental innovators and Grassroots innovation focuses on individuals as agent for innovation (Bhaduri and Kumar, 2009). The common thing in all these definitions is that here individual or communities are trying to solve the problems face by them without depending upon the government or outside support they working for their own help and improving

their status of life. Here we can see that the grassroots innovations are mostly coming from the bottom of the pyramid (Hilmi, 2012), uneducated, self-employed, outside the formal sector (Gupta, 2015), poor, and marginal people (Gupta, 2012), and the people who facing hardship in their life (Bhaduri and Kumar, 2009). So, in this case, grassroots innovations are coming from the different section of the society, not any section of the society are excluded in the grassroots innovation process, therefore many innovation scholars and authors use grassroots innovation as the alternative of the inclusive innovation. So what is inclusive innovation? According to Papaioannou (2014) Innovations can be inclusive of people and places as long as they can satisfy basic needs in an equitable and participatory way, they argued that innovation cannot be branded as inclusive unless there is evidence of equal satisfaction of basic human needs in specific developmental contexts. George *et al.* (2012) defined Inclusive innovation as an innovation that benefits the disenfranchised, is a process as well as a performance outcome. According to Heeks *et al.* (2013), there have been a number of changes that can justify the notion that there are new models of innovation for development:

- Significant involvement of the private sector and global value chains in innovation for the poor,
- The development of poor consumers as an accessible mass-market,
- Growth of technological capabilities within developing countries, and
- The involvement of new technologies especially information and communication technologies (ICTs) such as mobile phones.

Heeks *et al.* (2014) explained these as some of the component parts of a growth in practices that have been given the label "inclusive innovation". But different authors gave the different label to such type of innovations such as a label of "pro-poor innovation" by Abrol (2014), "below-the-radar innovation" Papaioannou (2014), "grassroots innovation" Gupta (2015), "BoP [base of the pyramid] innovation" Hilmi (2012). A recent Organization for Economic Co-operation and Development (OECD) report brands them as 'inclusive innovations' in 2012 and arguing that they can contribute substantially to improving the welfare of the worst-off in developing countries (OECD, 2012). Papaioannou (2014) argued that interrelated natural and social needs can be considered as alternative evaluative criteria of inclusive innovation. In this argument the focus here is not just on the outputs

of innovation, *i.e.* equity in the distribution of new goods and services that satisfy basic needs, but also on the process of innovation, *i.e.* participation in the generation of those new goods and services for basic needs. On the other side, many scholars and authors give arguments that these inclusive innovations can do the inclusive development. Papaioannou (2014) argued that Inclusiveness describes processes of equalisation of resources, welfare or capabilities, which prevent people from becoming marginalised and deprived. So now we see the understanding of inclusive development. Ramani (2014) explains the Inclusive development as a growth process that benefits all sections of the society without excluding any specific group and renders 'economic opportunities', generated by the growth process, accessible to all. In the other words, development is inclusive when the different sections of society, including the disadvantaged sections such as rural populations, women, youth, elderly, ethnic/ religious groups, or immigrants, benefit from economic growth and have opportunities to participate in the production process. Promotion of inclusive development has been one of the stated aims of the Indian policy since national independence. From the above discussion we can derive the understanding like this, the Grassroots innovations are mainly coming from poor, marginalised, uneducated, deprived and bottom of the pyramid people so these innovations can see as the inclusive innovation because these innovations include the participation of the people which are mainly excluded in the formal innovation sector. Here individuals or communities are made innovation for their own help and development of their own lifestyle so these innovations are considered as crucial for the inclusive development.

In the next section, we will see the different studies made by different scholars and different authors in this field of grassroots innovation.

Literature review:

There are different views of different authors on, to consider the grassroots innovations as inclusive innovation or not. They reflect their views by during the study related to this discussion. So now we will discuss these different studies in detail in this section and know their views. First, we see the studies which are considered the grassroots innovations as crucial for inclusive development but there are also many studies available which reveal the real condition of people in India, so we

discuss them in the next session.

Inclusive development through the Grassroots innovations:

Gupta (2012) did the study in Grassroots innovation as the innovations which are for the poor by the poor. In this study, Gupta explains how National Innovation Foundation (NIF) help for inclusive development through Grassroots innovation. Social diffusion of open source technologies is the even more important contribution of NIF. Gupta (2012) argue that inclusion can also take place by building their capacity to produce what they already know and do; or enable them to convert their innovations and outstanding traditional knowledge either as such or by blending /bundling it with knowledge of others, into products marked by them or other enterprises. NIF also help for their linkage with modern institutions of R&D to receive technologies or products developed by the institutions or to add value to their knowledge, innovation or practices for developing value added products for eventual diffusion through commercial or non-commercial channels can also help inclusion. Gupta (2012), gave an example of Dhanuk community, Ambala, Chhota Udaipur, Vadodara who has brought non-stick clay pots, which is completely natural, affordable, safe, makes food tasteful, and of course energy efficient. This community is used clay polished by a lac which grows on a 'phoim' tree found in that region. The quality of this lac for cooking has been tested in SRISTI[1] lab also. The community has been cooking on it for ages. This is unique contribution from Gujarat to the world. Once that happens, it may be that community will politely say no to NREGA (The Indian programme, National Rural Employment Guaranty Act) because they might earn more from these sustainable non-stick pots. He also gave some other examples of communities and individuals who created the inclusive development through the grassroots innovation to confirm their belief of the Grassroots innovation is plays important role in Inclusive development. In the other study Gupta (2008) addressed the problems faced by them in doing the inclusive development through the grassroots innovation. He explains various mediating organisations seem to have a kind of vested interest in suppressing the articulation of local genius. He also share one of his memories at the time when Global Research Alliance office took interest in showcasing grassroots innovations

at the head of the state meeting a few years ago, they lost interest when the issue of people to people learning emerged as an organising principle of the session. The brokers did not want to become the bridge. This is not the only time when efforts to promote linkages between innovators in India and Africa have been thwarted by the powers that be. Then Gupta (2008) share their other experience when Former Science and Technology Minister, South Africa Dr. Ben Ngubane was a great fan of Honey Bee Network. So Dr. Ben Ngubane wrote a letter of the Science and Technology Ministers of Commonwealth countries recommending a Honey Bee Network kind of grassroots-up movement in various countries. A visit of grassroots innovators from India was arranged to Limpopo so as to share their experiences with local youth. A public grassroots innovation exhibition was organised to share tremendous scope that exists for such lateral learning among creative communities across continents. But durable linkages have not been forged so far, despite a genuine desire and willingness to engage on both the sides. Grassroots to global (g2G) is a model whose time has come so that one way thrust of conventional model of globalisation can be reversed (Gupta, 2008). Inclusive innovation demands the development of new ways of producing and consuming resources by mixing ideas and/or combining technologies. Innovation and development of an eco-friendly and socially sustainable variety are interrelated challenges in India (Abrol and Gupta, 2015). Papaioannou (2013) explains development as to changing people's conditions by removing socio-economic, political and resource constraints which prevent them from entering into equal social relations and pursuing the kind of life they value. He also argue that achievements of inclusive innovation will depend not only on their diffusion to the poor but also on their generation according to principles of participation and equity. Ramani (2014) point out the main challenge in inclusive development through the grassroots innovation is to ensure that the poor and marginalised populations that are often hidden in the informal economy, *i.e.*, in productive activities not formally registered under local laws or as vulnerable informal workers, are also able to improve their conditions of life in the growth process. In recent time policymakers interest is growing in more inclusive approaches to innovation. Abrole and Gupta (2015) explains variety of 'inclusive innovation'

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1. Society for Research and Initiatives for Sustainable Technology and Institutions

approaches with analysis of it. This approaches are seek to promote innovation making at the level of grassroots with the help of non-formal innovators to provide maximum possible benefit to the economically poor population with the belief of that the non-formal grassroots innovators are far more capable than many others to produce innovations because these innovations can have a better fit with local market, resource constrained conditions and opportunities available for social inclusion and environment friendly development in the emerging and developing economies. Abrol and Gupta (2015), explained the model of development of non-formal innovators encourages them to collaborate with the institutions of the formal Science and Technology sector to realise the goals of inclusive development. According to Greenhalgh (2014), Honey Bee Network (HBN) is now recommended for the diffusion of alternate technologies to policy makers in the emerging and developing economies to promote inclusive development in particularly approach to the grassroots innovation by them (as cited in Abro and Gupta, 2015). De Keersmaecker *et al.* (2012), believe that in India governmental organisations are particularly supportive of grassroots innovations which have potential to be successful in the market and to meet the needs of the people in developing countries, especially at the base of the pyramid (BoP). They also suggest that these innovations are capable of addressing the features essential for this target group, like affordability, acceptability, availability and awareness. Papaioannou (2014) did the study to examine how the innovation can inclusive and development be in the twenty first century with the different examples of different authors and different organisations. In the result the author seen that this authors and institutions are failed in the process of inclusive development, basic need and global justice through the innovation. Then author did the four case study in detail in the context of their examination. At a first glance Papaioannou (2014) believe that these innovations are doing inclusive development but after examination results are different so now we will see that four cases are, 1: Computer-based Functional Literacy (CBFL) in India. The Tata Group has developed the CBFL technique to teach an illiterate individual to read in a fraction of time, only 40 h of training, at US$2 per individual. CBFL has so far helped more than 20,000 poor people learn to read and the ambition is for the technique to become available for agriculture and health-care

teaching. 2. Money Maker Irrigation Pump (MMIP) in Kenya. This innovation was designed by the Kick Start International non-governmental organization (NGO), and has been used by some poor Kenyan farmers at a cost of US$100. MMIP has helped a number of poor farmers to move from rain-fed agriculture to irrigated farming, boosting their annual income by US$1000 and increasing crop diversity. Kick Start estimates that it has helped to lift more than 400,000 people out of poverty. 3. Grassroots or Below the Radar Innovations (BRI) through the Honey Bee Network (HBN). A number of innovations have emerged in communities at the bottom of the pyramid. 4. Grassroots or below the radar innovations (BRI) through the Social Technologies Network in Brazil. A number of innovations which have provided solutions for social inclusion and improvement of livelihoods. After an explanation about this four cases Papaioannou (2014) evaluate these frugal and grassroots or BRI in terms of inclusiveness and terms of their contribution towards satisfying natural and social needs. The essential criteria of this evaluative framework are to what extent specific cases of frugal innovation and specific cases of grassroots of BRI satisfy both criteria, meeting equitable needs and improving participation. To begin with cases 1 and 2, existing evidence suggests that neither CBLF nor MMIP are equitable and/or participatory innovations. Both frugal innovations come at a price that, by definition, excludes those who live below the Millennium Development Goal of US$1.25 per day. The absolute poor in India and Kenya who are unable to purchase CBFL and/or MMIP and unable to meet their need to learn reading/writing skills and/or to improve their farming techniques. CBFL and MMIP cannot be seen as a means of development for everyone. There is no evidence to suggest that poor consumers were involved in their conception and production. In fact, CBFL and MMIP remain 'innovations from above' (Chataway *et al.,* 2013), which fail to meet any basic needs of those on the lowest incomes, and which fail to meet the participatory needs of those outside the elite innovatory clique. Moving on to cases 3 and 4, existing evidence suggests that both HBN and RTS may be participatory networks but not necessarily equitable. These networks include innovators such as farmers and entrepreneurs, policy-makers, academics and NGOs committed to identifying and rewarding innovative ideas and traditional knowledge produced at the grassroots level by poor citizens and their communities. The interaction between communities and technology developers leads

to adopting and benefiting from grassroots or BRI. However, benefits are not always equally distributed between poor consumers given existing power relations within their communities and wider socio-political structures of inequality. But, despite problems of equity, grassroots or BRI are more likely to satisfy basic needs than frugal innovations. The absolute poor in India and Brazil are able to use some of the HBN and RTS innovations provided they have a connection to these networks. To put it another way, grassroots or BRI promote collective empowerment for meeting local needs.

Now the question is raised that what should the role of public policy in the inclusive innovations? Public policy focused on both industrial and social development can provide combined institutional and financial support to those frugal and grassroots or BRI, which can satisfy basic needs. NIF is the best example of the answer to this question because it is the autonomous body of the department of science and technology, established by the government of India in 2001. NIF provide the all-round support to the grassroots innovators such as value addition, financial support, venture support, marketing, technology transfer, diffusion and Intellectual Property Rights support (data from NIF website). Ramani (2014) did the study on combining economic growth with inclusive development in the context of innovations in India. In her study, she answers the above question by pointing out some government strategies, programs, policies and schemes for the development of the rural people. Ramani and Szirmai (2014) highlight the types of strategies and rules implemented in the past and present for inclusive development. During the pre-liberalisation period, from the 1950s to the 1990s the main focus of the inclusive policy was in rural India. Four types of strategies were deployed. First, to lower inequity stemming from skewed land ownership, land reforms were carried out to abolish intermediary institution and feudal system of land holdings, and the land was transferred from feudal landlords to indigent populations in a series of bold steps. Second, to promote balanced development, public sector manufacturing unit were set up in peri-urban areas and intensives were provided for private industry to be set up in the less developed states. Third access to essential goods like food grains, fuel and medicines was established through a public distribution system and a public health care system. Fourth, there was a policy of positive discrimination in education and public sector employment for marginalised social groups. Initially, the focus remained

on rural India. So like this there are many programs are implemented in the rural India for the inclusive development. For instance, the 'Indira AwasYojana – Rural Housing Mission' was launched in 1996, followed by the 'National Drinking Water Mission' and the 'Total Sanitation Campaign' in 1999 to ensure that the rural population had housing, access to drinking water, and a functioning toilet. Another major programme, the 'national rural health mission', was initiated in 2005 to ensure health care for all. Similarly, in 2007, the 'national food safety mission' was initiated to lower hunger. New and committed government programmes are being initiated to increase the scope of the inclusive development. For the instant, the 'mahatma Gandhi national rural employment guarantee act' of 2005 ensures adult members of every rural household 100 days of employment in every financial year as unskilled manual labor in public works at minimum wages fixed by the government. It has definitely had a positive impact on women's empowerment (Vij, 2011). Urban slums and urban development are being explicitly taken in to account in state plans in the 'Jawaharlal Nehru national urban renewal mission', also initiated in 2005. In educational and public sector firms and agencies, seats were reserved by quota for those belonging to a 'scheduled tribe,' a 'scheduled caste,' "backward class" or linguistic minority'. If we examine all these government policies so we can understand that government made their efforts for the inclusive development so it launched different programmes for the different section of the society (Shtama and Szirmai, 2014). The untouchables who are more than 220 million known as dalits have been systematically neglected and ostracized in our Indian society for many illiterates. The main objective of Indian Education system had been to provide education equal access to all. Discriminating protection in the form of reservation has been accorded to Scheduled Castes / Scheduled Tribe and the other Backward Classes irrespective of gender divide. More than sixty years of independence, sixty years of implementation of reservation in the field of education and more Grants Commissions, still the dalits in India. They still lag behind (Benjamin, 2008).

However, there are also many studies available on gender-based and caste-based discrimination which pull back the people from the process of inclusive development. So first we will see the gender-based study and then caste based studies in India. Valk and Srinivasan

(2010) do the qualitative study on work-family balance of Indian women and their main focus on software professionals. This study attempts to understand how work and family related factors influence the work-family balance of Indian women IT professionals. The study is based on an exploratory qualitative study of 13 women IT professionals in the software sector in Bangalore, India. The work-family balance has been conceptualized as an individual's orientation across different life roles, an inter-role phenomenon (Marks and MacDermid, 1996), 'satisfaction and good functioning at work and at home with a minimum of role conflict' (Campbell-Clark, 2000, p 349), and 'a satisfying, healthy and productive life that includes work, play and love, that integrates a range of life activities with attention to self and to personal and spiritual development, and that expresses a person's unique wishes, interests, and values' (Kofodimos, 1984, p.xiii; Shaffer *et al.*, 2003) (as cited in Valk and Srinivasan 2010). As a result, Valk and Srinivasan (2010) find that women can do the family work balance effectively with the support from the organisation where she works, social support, family support and special support from her husband. Gneezy *et al.* (2009) studied on gender differences in competition and they use a controlled experiment to explore whether there are gender differences in selecting into competitive environments across two distinct societies: the Maasai in Tanzania and the Khasi in India. One unique aspect of these societies is that the Maasai represent a textbook example of a patriarchal society, whereas the Khasi are matrilineal. As a result, they found that culture has highly affected the role of the person in the society, so women in the matrilineal society is more competitive then the men and men are more competitive in the patriarchal society. So the problems like discrimination against women in patriarchal society do not happen in the matrilineal society. According to Sturges and Guest (2004) Work and family are the two most important domains of a person's life and there is a felt need to balance and integrate family needs and career requirements (as cited in Valk and Srinivasan, 2010). In a transitioning society like India, where the traditional roles of women as homemakers and caretakers are deeply entrenched, the work-family balance becomes a challenge for women and their employers (Valk and Srinivasan, 2010). From all these studies we can understand that Women are vulnerable members of the society, but all women are not equally vulnerable. Those women who are poor or widowed or

belong to a particular caste or region are more vulnerable than others. They are excluded from the inclusive innovation process.

Now we see the studies which are based on the discriminations against the people based on their caste. In 1982 Gandhi tries to explain the concept of untouchability, so according to them, the caste of the priests (the Brahmins) would consider the caste of the street sweepers (the Bhangis) as an untouchable caste. This does not mean that there is no social relationship between these two. It simply means that the relationship between these two is one of social distance, maintained and guided by the norms set by the Brahmins. Whatever social interactions take place between the Brahmins and the Bhangis will also be bound by such norms of social distance. When the government seeks to change the rules, or when the position of subordination is challenged by the lower caste, the upper caste may not hesitate to use violence as a weapon to "straighten out" the untouchable caste. National Crime record Bureau reported 45003 crimes against Scheduled caste by non-scheduled caste, and 10914 reported cased for crimes against Scheduled Tribe by Non-scheduled tribe. This has happened in the past. It has happened all throughout the history of India, and it is happening even now. Benjamin (2008) attempt to evaluate the level of education of Dalit in India. According to him, Different scholars/social reformers have explained the concept of Dalit in different ways. Its intellectual antecedents have a long history. What we call Dalit has been defined in the variety of sub-names. They were called untouchables, Harijans, depressed classes, Scheduled Castes. The untouchables were characterised by the upper caste, social reformers, particularly in Maharashtra, in a variety of ways. For example, S.M. Mate, a Brahmin Social reformer in the 19th century Maharashtra, used the term asprusya for Dalits, meaning the untouched rather than the untouchable. Be that as it may, the Hindu society insists on the segregation of untouchables and does not allow them to live inside their main residential areas. They were generally required to live at a distance from the mainland. The alternative to the Gandhian used the concept of Dalit in his fortnightly magazine comprehensively: ' Dalithood is a kind of life condition, suppression and marginalisation of Dalits by the social, domination of upper caste brahminical order. Coming to the concept of scheduled castes most of us believe that scheduled caste is a sociological concept but it is a politico-legal concept. It

was first used in the government of India Act 1953 (Benjamin, 2008).

All these studies are given argument at relevant to the field but these studies are different from each other because some studies are done in the innovation field and some studies are done in the situation of the people in the society so they are not interrelated to each other. So in the next section first we see the methodology part of the study and then in the next section, we see the interrelation to these different studies. In these studies, authors are trying to show that innovation are the crucial factor of the development and we can achieve the goal of inclusive development through the innovations by the grassroots people. But some studies also reveal the real situation of the people which are excluded from the developmental process because of the basic social problems remained in the society.

METHODOLOGY

In this paper, we selected some grassroots innovations which are registered under the database of NIF. We examine the development discourse of these innovations and also explore the role of that grassroots innovation in the inclusive development. Then lastly we examine the impact of the social local problems which reduces the chances of inclusive development through the grassroots innovation. We also examine the efforts of grassroots innovation to reduce such type of social problems and discrimination in the society. Our analysis in the context of this study is based on the data we collected from the secondary as well as primary data sources. As a secondary data collection, we have used the sources of information available on the internet such as the books, articles, blogs and the research papers by the different authors and innovation scholars. We also use the online information being made available on the websites of HBN, NIF, SRISTI and GIAN, this information is in the form of publications and other written documents by such as award books, annual reports, magazines and state books. Then there are also the news items about these innovations covered by local media or other organisations, available on the internet. The primary data was collected from some grassroots innovators whom we meet in the different occasion. We meet some innovators during the third international conference on creativity and innovations at grassroots, Nagaland sodhyatras and Sattvik food festival at Ahmedabad during 24-26 December 2016. This is the methodology we used

in this study and now in the next section of this paper we discuss the analysis or the result of this study.

Examine and analysis of the inclusiveness of the Grassroots Innovation:

In this section, we will try to understand the relation between the development and innovation and then we also explore the role of grassroots innovation in India. In the debate for this study we point out some social problems which highly effect the daily life of the people, and the problems they faced by them which are hurdles for achieving the inclusive development but in whole the discussion not any author mention this factors. So based on those social problems we can examine that can we consider grassroots innovation as the crucial part of the inclusive development or not.

The grassroots innovations like the Ganga, Yamuna Pulley with stopper innovated by Amrutbhai Agrawat, tong for lifting heavy vessels by Arvind Bhai Patel, Auto stopper for LPG stove by Davalsab Ladammanavar, Automatic food making machine by Abhishek Bhagat, Machine for cleaning the rice by Mohammad Sajid Ansari, Earthern kitchen products by Mansukhbhai Prajapati, Tea making machine by Ashok Kumar Dhiman, Natural Nonstick earthen utensil by Jentibhai Nayak, Desingbhai Dhanak, Raghubhai Bhil, Kashmiri gas samovar by Shazia Jan, Multipurpose kitchen tool by Jasveer Kaur are mainly used for the domestic purpose and also innovated with the aim of helping the women community in the Indian society. On the other side according to National Crime Record Bureau, there are 327394 crimes are reported against the women the year of 2015. On the one side the innovations are made for helping the women and on the other side, these much crimes are made against the women in the society. However, these innovations are made by men to help to women in the household activities but the strange matter is the Indian patriarchal society's mentality which still said that the household activities are only the responsibilities of women. House management, cleaning the home, receiving the guests, cooking, and take care of children are only responsibility of the women of the house not a responsibility of the men, however, the women of the home are younger or elder than the other male family members. Webster (2002) points out that family structures and female roles vary across countries, but overall, women continue to be the primary provider for domestic and childcare responsibilities. The presence of large numbers

of women in the workforce and their drive for careers has resulted in increasing attention to work-family balance issues (as cited in Valk and Srinivasan, 2010). All the innovators are wanted to helping the women but still, the question is there not a single innovator is thinking about the work of home made by any male person. As we see around our society that in the big restaurants and hotels the chefs are the male person, means the male can choose cooking as a career and for earning money but still they want cooking at the home is only made by the female person in the family. So nowadays the situation is like this women can contributing the financial support for help the family by doing the work outside the home but the responsibility of the home is to remain on the shoulder of the women. According to Ramani and Szirmai (2014) as the positive impact of the government policy in the rural India many families women are being allowed to break socio- cultural barriers and work outside of the confines of their homes for the first time. Culture highly affect the role of the person in the society. In the patriarchal society, women are less competitive than men. Yet, this result reverses in the matrilineal society, where we find that women are more competitive than men (Gneezy *et al.,* 2009). Instead of this domestic violence against women is another consequence of the Indian patriarchal society. There is no evidence needed for the data of domestic violence we can see it around our society everywhere and daily we will find such cases of domestic violence in the news ad newspapers. Singh and Sandeepa (2014) gave some data on women violence in their study on women violence in India, so according to The National Family Health Survey (NFHS)-3, one of the most authoritative surveys in the country, surveyed several aspects of gender equality and women's empowerment in India. When the norm about men's 'right' to beat their wives was explored, it was found that overall, more women aged 15-49 (54%) agree with one or more reasons for wife beating as compared to 51% of men in the same age group (as cited in Kishor and Gupta, 2009). So changing the mentality of the Indian patriarchal society towards women and stop the domestic violence on the women is more important for inclusive development process rather than innovate these types of innovation for helping the women.

The idea of Check dam by Bhanjibhai Mathukiya and Premjibhai Patel, Panihari no visamo (the water pot stand) innovated by Khimjibhai. They made these dams and water pot stand for helping the people in their village.

But the question is that the water from this dams is accessible to all the people of the village? Because Caste-based discrimination is the most complex human rights issue facing India today (Understanding Untouchability, 2010). According the result of Understanding Untouchability which is the comprehensive study of practices and conditions in 1589 villages which is conducted by The Navsarjan Trust and The Robert F. Kennedy Center for Justice and Human Rights conducted in 2010, in the 97.6% of villages of Gujarat state the Dalits must not touch the water pots or utensils of non-Dalits; such contact is considered defilement. In the 71.4% of the villages surveyed untouchability is practiced related to water tap located in the Non-Dalit area. I am also the witness of the practicing the untouchability in the village which is located just 20 kilometers away from the metro city like Ahmedabad. Here I saw that the Dalit women cannot take the water from the well herself when the non-Dalit women come to well and if they pour the water in Dalit women pot so they can take water otherwise Dalit women wait until the non-Dalit women come to well for the water. In the collaboration with DRISHTI Media, arts and human rights, Navsarjan Trust also made one documentary film named as 'India Untouched' in 2007 in which we can found the evidence for which types of untouchability is still practicing in the all over the Indian society. The age-old social hierarchy in Hindu society has historically positioned Dalits as eternally polluted, feared to pollute sacred water sources (Joshi and Fawcett 2006). Joshi does one study on India's drinking water sector in 2011, in which she found that the fresh water under- ground springs (naulas) of these mountain villages are not accessible to the Dalits in the mountain villages and elsewhere. Dalits have historically lived in hamlets distanced from the main village and the primary water sources, which were also areas where the main village temples were situated (Joshi, 2011). Dalit women have to steal cool sweet water from naulas on the hot summer days. They send young children to steal the water and then beating them severely in a faked expression of guilt if caught; of ceremonies performed by communities to purify the naulas (Joshi, 2011). So we think that if the Dalit women cannot take the water from the well then what the meaning of water pot as a helping hand for women on the other side the Dalit people not allowed to touch the water pots of non-Dalit and also Dalit people not fill the water from the tap or dam which is located in the non-Dalit area so what the meaning of check dams.

On the one side, this type of discrimination practicing to the Dalit people and on the other side grassroots innovation discussed the inclusive development through the innovations. If the innovators are thinking about the inclusive development of the society so why these Dalit people are excluded and innovators or other people of the society are even not thinking about the inclusion for these people in the development process.

By the innovations of sanitary napkin making machine, sanitary napkin vending machine and sanitary napkin at low coast Muruganantham want to reduce the pain of the women who are suffered during the menstruation periods. Because of this affordable low coast sanitary napkin now no need for women to use rugged cloth as the supplements of sanitary napkin. Women feel humiliated when she outside the home and comes in menstruation periods but now she can get the sanitary napkin anywhere by deposit one coin just like ATM machine. This is ok but what we think when we come to know that 34651 rape case, are reported by National Crime Record Bureau (NCRB) in the year 2015. Scully and Marol (1985) interviewed 114 convicted, incarcerated rapists. Their analysis revealed that a number of rapists used sexual violence as a method of revenge and/or punishment while others used it as a means of gaining access to unwilling or unavailable women. In some cases, rape was just a bonus added to burglary or robbery (as cited in Singh and Sandeepa, 2014). Here innovator gave the sanitary napkin making machine to the Self-Help Groups in the villages so from that the women can earn the money and can do their economic development. But what about that 7634 women are meeting the Dowry death in the year 2015 (data from NCRB website). Joshi did study on Caste, Gender and the Rhetoric of Reform in India's Drinking Water Sector in 2011 so according to her study it is the mentality of those people the water was polluted if the women touch that water in her menstruating period and then the purification ceremonies are performed to absolve the pollution. In the Indian society even educated girls are feeling hesitation for asking for the sanitary napkin to the male shopkeeper so how can we expect that the rural women can buy and use the sanitary napkin when she always worried about the financial condition of the house. In this society menstruation is not the matter of concern of the men so how can rural women discuss or buy the sanitary napkin in the village. Here the argument is that before we think about the inclusive development of the

society by helping the women, once we have to think about stop the crime against the women and change our mindset towards menstruation period. After that, no need to help of women just gave them way and they have potential to prove their self and development from their own way. When gender-based discrimination and crimes against women will stop the inclusive innovation can take place automatically in the society.

Another Grassroots innovation is washing cum exercise machine which is innovated by Remya Jose. In the answer to question of how the idea of this machine come to her mind Remya said that her mother fell ill during her 10th standard exams and her father was undergoing cancer treatment. She had to change three buses while going to and coming from school and spend about two hours each way. As there was no washing machine at home, the chore of doing the laundry fell to her and her twin sister. So instead of just wishing futilely for a washing machine, she decided to try her hand at making one during the vacations. In all this situation of Remya, we can see that if the one woman of the family cannot able to work then the responsibility of home comes to the shoulder of the other female person of family. Educated, modern and financially stable families in which husband and wife both are working and also if this family is living in the city area or in the area of open minded people then husband will try to help her wife by some work like cleaning the home, shopping for the home, and maintain the home. So always women have to make the sacrifice of her career for family. Such discrimination usually affects women's access to social resources such as education. Patriarchal culture provides multiple incentives for the preferential educational treatment of boys. An investment in schooling for boys tends to have much larger economic payoffs than an investment for girls. More- over, exposure of girls to new ideas and social contacts beyond the con- fines of the household can threaten to undermine the very basis of sexual and ideological control of women by their families. Thus, not only is their pressure for women to reproduce within marriage, but they are likely to be married early to ensure chastity and maximise reproductive value (Malhotra *et al.,* 1995). According to National Statistical Survey 2014 report as per 1000 distribution of dropping out/ discontinuance (for persons aged 5-29 years), there are 297 female drops out and leave the education because she engaged in domestic activities and 139 women drop out because of marriage. So in the rural area, there is the

vast difference in the literacy rate of men and women so literacy rate of women is 57. 93% and the male literacy rate is 77.15% in the rural area in the year 2011 (census, 2011). Remya made this machine and she can handle the situation at home and school both but there are many women in the rural areas which women have to leave their education because of household activities. So if we want to include rural women in the inclusive innovation process we have to help them in household activities and let them free to become educated by taking the education from attending the school.

Laxmiasu making machine for Pochampallisaree by Mallesham and Automatic saree border weft insertion by P.L. Banumurthi, are grassroots innovations for Indian Saree for women. If Women wearing a saree is a symbol of she is following the Indian traditional culture. But in the recent decades, people from Northeast of India, particularly women have been the target of attacks in different Indian cities. North-eastern women have been particularly targeted for sexual assault, for reasons that seem to defy logic. More than sex, rape is used to demonstrate power over women, to humiliate and break them. This phenomenon is worldwide, in most surveys the way the victim dresses, behaves, drinks, smokes or parties seem to influence the attribution of responsibility. Blaming the victim for rape or other crimes is a known phenomenon and its systematic study is known as 'victimology'. Singh and Sandeepa (2014) argue that according to their knowledge there is no study that shows that a woman dressed in a burqa is safer than one says dressed in a mini skirt, in the same setting. Bachman and Paternoster (1993) point out that typical rape shield laws (in US and Canada) prohibit cross-examination of the accuser (alleged victim) with respect to certain issues, such as her or his prior sexual history, or the manner in which she or he was dressed at the time of the rape (as cited in Singh and Sandeepa, 2014). Drieschner and Lange (1999) conclude that men with a high proclivity to rape have more rape supportive attitudes, are more likely to consider victims to be responsible for rape, and are less knowledgeable about the negative impact of rape on the victims (as cited in Singh and Sandeepa, 2014). Means wearing a saree is not symbol of culture but our positive attitude, good thoughts, point of view to look at women and perceptions towards women are symbol of the culture.

Concluding Remarks:

In the beginning of the paper we saw grassroots innovation for inclusive development but after that, we discussed because of certain factors grassroots innovation not achieve the goal of inclusive development. Then we review the different studies which are based on the different section of the society. Based on that we derived the conclusion is that however, NIF tries to do the upliftment of the people by the grassroots innovations from the different sections of the society. But still, there are some social problems which become hurdles in the inclusive innovation through grassroots innovation. There are some people of the society which are suppressed and marginalised and get violated by the other section of the society. Women and Dalit are excluded people from the inclusive development process and because of them inclusive development not happened possible. But it is not impossible also, we can do it by just making some more efforts to include marginalised people in the development process. First of all, we have to stop the crime and violence against the women and Dalit, eradicate untouchability and change out mentality towards women. Women are the pioneer of entire human society if they are excluded so what the meaning of development. The best way to improve the situation of women and Dalit in the society is that gave them equal opportunity to access all resources and fulfil their basic needs and let them equal participation in the society. They have potential to do the development their self just give them chance to prove themselves. If we can do all these then inclusive development occurred automatically and no need to do innovation for the development.

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