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## REVIEW ARTICLE

# Social Justice Through Rural Development Programmes: A Case of MGNREGA in Tamil Nadu

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### Abstract:

#### Introduction:

A Village is one of the most powerful weapons for promoting economic and allied activities. Rural population lives in primitive conditions. The key function of village is agriculture and allied activities which supply major types of food for every human being and cultivation is the only source of their income.

#### Discussion:

At present, the conditions of the Indian villages are under gloomy and they are still poor. In this circumstance, the government of India has been initiating developmental policies and programme for their development. MGNREGA is one of the successful policies in rural development through economic activities.

Present paper deals with how MGNREGA contributes to rural development and what is the present situation of village and how rural development programmes lead to social justice?

#### Conclusion:

Rural development is traditionally focused on the exploitation of natural resources such as agricultural, forest and mining. Rural planning is the process of improving the equality of life and economic well being of community living in relatively unpopulated areas rich in natural resources.

**Keywords:** Rural Development, Panchayat Raj, MGNREGA, Social Justice, Discrimination, Developmental Programmes.

## 1. INTRODUCTION

In India, majority of the population lives in rural area with primitive circumstance. As per 2011 census of India, the total rural population is 1,028,737,436 which increase from 2001 to 2011 (1, 210,193,422) [1, 2]. After Indian independence, India is committed to provide just social order through community participation and for their development. In this circumstance, the government felt that there is a need for a welfare programme for community development. In the year 1952 government started a community development programme to provide for a substantial increase in the country's agriculture and for the improvement in communication system, education and also for the health and hygiene. Government aimed at transform the socio- economic life of villagers. The rural development is the foundation for socio- economic improvement of all Indian states. Rural development is the process of improving the quality of life of the rural poor by developing capacities that promote community participation, health and education, food security environmental protection and sustainable economic growth . This programme has not yielded desirable objectives and which leads to shift into a holistic approach towards people participation of the rural community. The

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active people participation is a major role to play in the enhancement of socio-economic status of rural people. Through rural development can achieve rural democracy and it is still practicing among rural community. This programme is base for MGNREGA. My Agriculture Information Bank said that the main objective of the rural development is to improve the living standards of rural people by utilizing the easily available natural and human resources through 1. Development of agriculture and allied activities, 2. Development of village and cottage industries and handicrafts, 3. Development of socio-economic infrastructure which includes setting up of rural banks, co-operatives, schools *etc.*, 4. Development of community services and facilities *i.e.* drinking water, electricity, rural roads, health services *etc.*, and 5. Development of Human resource mobilization [3]. Gangopadhyay, Mukhopadhyay & Pushpa Singh (2008) said that the basic objectives of Rural Development Programmes have been alleviation of poverty and unemployment through the creation of basic social and economic infrastructure, provision of training to rural unemployed youth and providing employment to marginal Farmers/Labourers to discourage seasonal and permanent migration to urban areas. They also pointed out that The Government's policy and programmes have laid emphasis on poverty alleviation, generation of employment and income opportunities and provision of infrastructure and basic facilities to meet the needs of rural poor [4].

India experimented with more than two thousand schemes and programmes to reduce poverty and vulnerability in the rural areas from 1951 to till date. From the first five years plan to Twelfth *Plan year plan (1951 -2017)*, Massive investment had been made and a variety of approaches had been adopted to transform the rural areas. Yet, beyond a particular level poverty and vulnerability could not be reduced. As a result, development has been made a right. In this context, a massive and innovative programme has been launched to reduce poverty and vulnerability. It is through an act called "National Rural Employment Guarantee Act (NREGA). Subsequently, it has been rechristened as Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). The mandate of the act is to provide 100 days of guaranteed wage employment in a financial year to every rural household whose adult members volunteer to do unskilled manual work [5].

The objectives of the programme include: Providing 100 days work as per demand resulting in the creation of productive assets of prescribed quality and productivity; Strengthening the livelihood resource base of the poor; Proactively ensuring social inclusion; and Strengthening panchayati raj institutions. Thus, it would create impacts in the villages and the households. Broadly it is assumed that this act and scheme would provide social protection for the most vulnerable groups living in the rural areas. By providing employment opportunities, it provides livelihood security for the poor, through creation of durable assets, improved water security would be provided and by doing soil conservation, agriculture productivity would be increased. By doing the above efficient drought proofing and management of natural disaster would be done. Further, it would empower the socially disadvantaged groups in the rural areas. It would strengthen the panchayati raj system by evolving a micro plan with the participation of people by converting the schemes and programmes meant for poverty reduction. Thus, it facilitates the creation of new water ponds, temple tanks and desilting of channels and tanks. It would enable the people to strengthen the bunds of irrigation tanks and other water sources . It enables the panchayats to take initiatives to work for the formation of roads; water conservation, soil conservation and flood protection measures. Thus, the scheme got tremendous potentials to create impact at the village level, community level and household level. It would create an opportunity for labourers to bargain for better wages; a better work environment, less exploitation and less migration. It constructs just social order through equal pay for equal work and the right to work in public places [6].

Against this background, this study tries to investigate the results of act about the right to work in public places. The main objective of this study is to find out the injustice practice among MGNREGA workers in Dindigul district of Tamil Nadu and whether MGNREGA promotes platform social justice or is it creates practices of injustice among the workers. It is a qualitative study conducted and it makes an attempt to test a hypothesis is that just social orders can be constructing through MGNREGA in area. This study provides primary evidence for the testing hypothesis. Both primary and secondary data have been collected. Primary data have been generated from books, articles, journal, government reports, internet sources; and primary data have been discussed in the survey.

Dindigul district of Tamil Nadu has been purposely selected and MGNREGA was implemented in first phase at 2006. Dindigul district ranked 16<sup>th</sup> in terms of the highest population in the State. The district population density was 358 persons/sq km, lower than the State population density of 555 persons/sq km. There are 8 Taluks, 362 villages and 34 towns in Dindigul district. As per the Census of India 2011, Dindigul district has 5,60,773 households, population of 21,59,775 of which 10,80,938 are males and 10,78,837 are females. The population of children between age 0-6 is 2,16,576 which is 10.03% of total population. The literacy rate of Dindigul district is 68.61% of which 75.51% of males

are literate and 61.7% of females are literate. There is 20.95% Scheduled Caste (SC) and 0.37% Scheduled Tribe (ST) of total population in Dindigul district. The district sex ratio was 998, higher than the State sex ratio of 996. The district literacy (76.3%) was lesser than the State literacy rate (80.1%). The decadal population growth during 2001- 2011 in the district was 12.3%, lower than the State average of 15.6%. The District rural population was 62.59%, higher than the State rural population of 51.60%. At present, there are 8 taluks and 3 Municipalities (Dindigul, Palani and Kodaikanal), 24 Town Panchayats and 7 Census Towns, 14 Community Development Blocks and 306 Village Panchayats in the district. Under the revenue administration, there are 4 Revenue Divisions, 8 taluks and 362 Revenue Villages (330 inhabited) in this district [7, 8].

## 2. MGNREGA: AN OVERVIEW

After 1952 several programmes have been lunching in favour of rural development for their upward mobilization of socio – economic status which adopted by the government under various five-year plans. Union government has launched a lot of rural development programmes under Five Year Plans. Many programmes were planned and implemented for the upliftment of the rural people in Indian states. MGNREGA is one of the successful welfare programmes for community development through people participation and it is to provide economic justice for everyone [9].

National Rural Employment Guarantee Act (NREGA) was enacted in 2005, later it's renamed as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and it is mandatory to provide at least 100 days of guaranteed wage employment in a financial year to every rural household whose adult members volunteer to do unskilled manual work. Union government passed the MGNREGA in the monsoon season on August 23, 2005. The Act received the assent of President on September 5, 2005, and was notified on September 7, 2005. It was implemented in 200 India's most backward districts on February 2, 2006, in its first phase. And its coverage has been extended to 130 more districts of India since April 1, 2007, in its second phase. The Act is implemented in all districts of India from April 1, 2008. The Planning Commission of India said that the objective of the MGNREGA is" to enhance the livelihood security of the people in rural areas by guaranteeing 100 days of wage employment in a financial year to a rural household whose members volunteer to do unskilled manual work. The Act further aims at creating durable assets and strengthening the livelihood resource base of the rural poor. The choice of works suggested in the Act address causes of chronic poverty like drought, deforestation, soil erosion, *etc.*, so that the process of employment generation is on a sustainable basis" [10].

## 3. MGNREGA IN TAMIL NADU

National Rural Employment Guarantee Act was enacted in September 2005. The National Rural Employment Guarantee Scheme was launched on 02.02.2006. This scheme has implemented in three phases in Tamil Nadu, the first phase was initially implemented in six districts, second phases was implemented in four districts of Tamil Nadu, and the third phase of this scheme was extended to the remaining twenty-one districts of the State. In Tamil Nadu, 116.79 Lakh workers were registered in MGNREGA among the 86 .78 Lakh of people are active workers Table 1 [11].

### Salient Features of the MGNREGA [12]

- Provision of 100 days of guaranteed wage employment in every financial year to each registered household in the Village Panchayat, whose adult members volunteer to do unskilled labour.
- The Central Government bears 100% wage cost of unskilled manual labour. Material cost including wages of skilled and semi-skilled workers is borne by Central Government and by the State Government in the ratio of 75:25.
- No contractors or machines are allowed.
- The wage and material components have to be maintained at 60:40 ratio for all the works undertaken by Village Panchayat and other implementing agencies at the District level.
- Out of the total works sanctioned, 50% should be allotted to Village Panchayats.
- Adult members of rural households willing to do unskilled manual work may register orally or in writing with the Village Panchayat.
- Every rural Household is entitled to a job card so that they can apply and receive work.

In order to facilitate registration of new job cards and redressal of the grievances of workers, RozgarDiwas (VelaivaippuDhinam) is organised in all Village Panchayats once in a month.

- All workers shall have the right to participate in the Gram Sabha and decide the Shelf of works and the order of priority of works to be taken up under MGNREGS in their Village Panchayat.
- If the distance of worksite exceeds 5 km, additional wage of 10% of existing wage rate is payable to meet the cost towards the additional transportation and living expenses. However, in Tamil Nadu, worksites are being fixed in such a way that works are available within a radius of 2 km.
- The wages for unskilled labour has been fixed based on the Rural Schedule of Rates. As per the revised Schedule-I of MGNREG Act, the Schedule of Rates for wages of unskilled labourers is so fixed that an adult person working for eight hours which include an hour of rest (*i.e.*, 7 hours of work) will earn wages equal to wage rate.
- Wages are equal to both men and women and the notified wage rate for 2016-17 is Rs.203 per day.
- Disbursement of wages is done through Public Financial Management System (PFMS) and wages credited to the worker's accounts within 15 days.
- One-third of the beneficiaries should be women.
- Worksite facilities such as drinking water, first aid kit, shade *etc.*, shall be provided.
- Grama Sabha conducts the social audit in respect of MGNREGS through Village Social Auditors.
- A Toll-free Helpline (1299) has also been provided in each district as part of the Grievance redressal mechanism.
- Under Section 12 of the MGNREG Act, Government of Tamil Nadu has constituted the State Employment Guarantee Council to advise, evaluate and monitor the implementation of the scheme.

**Table 1. MGNREGS – introduced in 3 phases, Tamil Nadu.**

Phase	Districts
First Phase (2.2.2006 onwards)	Cuddalore, Villupuram, Tiruvannamalai, Nagapattinam, Dindigul, Sivagangai
Second Phase (1.4.2007 onwards)	Thanjavur, Tiruvarur, Karur, Tirunelveli
Third Phase (1.4.2008 onwards)	Kanchipuram, Tiruvallur, Vellore, Salem, Namakkal, Dharmapuri, Krishnagiri, Erode, Coimbatore, The Nilgiris, Trichy, Perambalur, Ariyalur, Pudukkottai, Madurai, Theni, Ramanathapuram, Virudhunagar, Thoothukudi, Kanniyakumari, Tiruppur

Source: Rural Development and Panchayat Raj Department, Chennai, Tamil Nadu.

In Tamil Nadu, it has been implemented in three stages Table 1. In 2006, it was implemented in six backward districts namely Cuddalore, Dindigul, Nagapattinam, Sivaganga, Thiruvannamalai and Villupuram . In the second phase in 2007, it was implemented in four districts namely Thanjavur, Thiruvarur, Thirunelveli and Karur. In the final phase, it was implemented in all the rest 21 districts in 2008.

**Table 2. Details of Job Card Holder, Tamil Nadu.**

Details of Job Card in Tamil Nadu	
Total No. of Job Cards issued [In Lakhs]	79.9
Total No. of Workers [In Lakhs]	116.33
Total No. of Active Job Cards [In Lakhs]	69.35
Total No. of Active Workers [In Lakhs]	86.76
(i) SC worker against active workers[%]	28.26
(ii) ST worker against active workers[%]	1.34

Sources: <http://nrega.nic.in/netnrega/home.aspx>

Table 2 shows that 79.9 job cards was issued and of them, 69035 cards are in operation and in effective use. Total numbers of workers are 116.33 and of them 86.76 workers are in work, Scheduled Caste (28.26%) and Scheduled Tribes (1.34%) are working in this programme.

Table 3 illustrates that the community wise details of job card holders in Tamil Nadu, 2006 – 2018. From the above data, it is observed that the Non-SC/ST Job Card Holders have been increasing but SC and ST Job Card Holders have been slowly decreasing.

Table 3. Community wise details job card holder in Tamil Nadu, 2006-2018.

Sl. No.	Period	Total SC Job card Holders	Total ST Job card Holders	SCs/STs Job Card Holders
1.	2006-2007	572102 (49.42%)	32727 (2.83%)	552696 (47.75%)
2.	2007-2008	980500 (44.56%)	37856 (1.72%)	1182081 (53.72%)
3.	2008-2009	2354280 (42.71%)	91016 (1.65%)	3067531 (55.64%)
4.	2009-2010	2700881 (41.32%)	113852 (1.74%)	3720977 (56.93%)
5.	2011-2012	2239028 (26.75%)	133854 (1.60%)	5998425 (71.65%)
6.	2012-2013	2672006 (28.95%)	145815 (1.58%)	6410597 (69.47%)
7.	2013-2014	2446962 (28.80%)	136566 (1.61%)	5913762 (69.60%)
8.	2014-2015	2333097 (28.37%)	131375 (1.60%)	5760481 (70.04%)
9.	2015-2016	2345742 (27.66%)	132125 (1.56%)	6002146 (70.78%)
10.	2016-2017	2164409 (27.40%)	118425 (1.50%)	5617002 (71.10%)
11.	2017-2018	2122238 (27.06%)	116480 (1.49%)	5604681 (71.46%)

Sources: <http://nregarep2.nic.in/netnrega/dynamic2/dynamicreportnew4.aspx>.

#### 4. SOCIAL INJUSTICE AMONG MGNREGA WORKERS

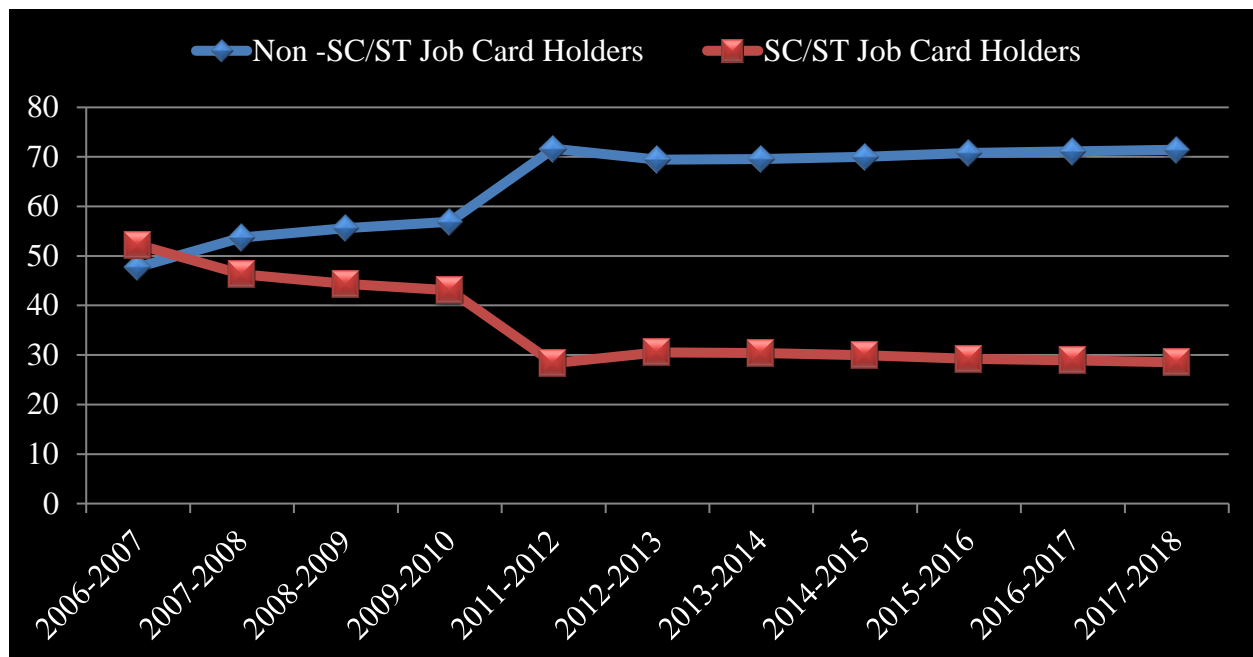
Since the implementation of MGNREGA, Many studies have been done regarding with MGNREGA and its implication, problems, impact on household and village level, however, few research has been studied on social injustice and MGNREGA.

A study was conducted by Poorest Areas Civil Society (PACS), New Delhi, and found that “Socially excluded groups are often not included in the MGNREGA planning process and so the resulting MGNREGA projects in the annual plans do not benefit them. For example, a village Gram Panchayat may decide to carry out a “land improvement” project under MGNREGA, but this improvement will not extend to land that is owned or farmed by socially excluded villagers. In addition, they are unable to access or use those assets that are built, such as water pumps, irrigation systems or village services, due to discrimination against them”. After the implementation of this act everyone believed that MGNREGA creates a positive impact, at the same time, this act promotes social injustice. Scheduled Castes and Scheduled Tribes have deviated from the planning process of village panchayat [13]. In this aspect, present research feels that the discriminations are practicing among society through the help of village panchayat administration. Union and State government do not care about the welfare of SC/ST. Another study was conducted by Ranjithkumar and Rajesh Kumar Sinha (2017) and found that “Scheduled Caste populations of village panchayat are far from the mainstream. They are segregated from the mainstream life of this village. These communities have been celebrating the separate cultural festival and do not participate in the cultural festival of upper caste ” and further this study said that less representation is given to SC in Gram Sabha [14]. A study was conducted by Prof. G. Palanithurai and said that eight districts in the state: Madurai, Dindigul, Theni, Salem, Sivaganga, Erode, Perambalur and Cuddalore were found to have a high incidence of caste-based discrimination. It was inferred that 36 forms of discrimination had been adopted against Dalits by the dominant communities. Discriminatory practices and their intensity varied from district to district [15]. Thara Bhai has conducted a study on Gender, Caste and Politics in Rural Tamil Nadu. This study found that the villagers are yet to accept the leadership of lower castes and women and dominant cast never allow the *Dalits* to participate in the functioning of the villages. The study pointed out that SCs are still excluded from the local government [16].

It is evidence that from these studies, the discriminations and atrocity are practicing against SCs by the so-called Hindu communities. Indian Constitution assures that everyone has equal under the law which was in a written statement and legal perspectives, in practice no one is equal . In this context, I can quote Martin Luther King Jr.view’s on injustice

and he quoted that “Injustice anywhere is a threat to justice everywhere”.

Chart (1) illustrates that communities wise Details of Job Card Holders in Tamil Nadu from 2006 to 2018. From 2006 to 2010 non – SC/ST job card holders were increasing, after 2010 – 2012 non – SC/ST job card holders unexpectedly were increasing, from 2012 to 2018 job cards were slowly increasing. From 2006 to 2010 SC/ST job card holders were decreasing, after 2010 – 2012 non – SC/ST job card holders surprisingly is decreasing, from 2012 to 2018 job cards were slowly decreasing. It is observed that from 2010 - 2012 Non-SC/ST job card holders were suddenly increased but in the case of SC/ST job card holders were declining. The researcher feels that there is a cost and effect relationship between job card holders among SC/ST and non-SC/ST communities.



**Chart. (1).** Communities Wise Details of Job Card Holders in Tamil Nadu.

## 5. DISCUSSION AND OBSERVATION

From the focus group, discussion and observation methods following finds have been discussed. In spite of many attempts of the union and state government law, Discrimination and untouchability are being practiced against Scheduled Caste. Modern technology and new welfare policies do not give good result in favour of Scheduled Caste. Day by day atrocities against Scheduled Caste is growing. Based on field survey present researcher has found following discriminations and atrocities against Scheduled Caste in Dindigul district of Tamil Nadu.

The main duty of Village panchayat is to allocate work and place of work with approved from the gram sabha. After implementation of MGNREGA, SCs have being denied to work in common palace. The so-called caste Hindu does not allow into work at common places even cleaning street, cleaning in temple. Scheduled Caste communities have been denied to work in common place and they are not allowed into main places to clearing street, plantation, and fish formation and so on. While the present research interacts to SCs and they said that we had faced lot of discriminations in colonial period. After long journey of democracy, the principle of democracy has failed. In colonial period time, upper community had not permitted to access in common places. Even in modern time, they had not permitted to work in common places.

I agree that MGNREGA helps to the upward mobilization of SC community, at the same time discriminations is mounting against SCs. It observed that the village panchayat has allowed working within limit of their territory; in working place SCs are facing discrimination. Dominate communities are using verbal and nonverbal simples against SCs. The SCs have approached authorities to segregation of work. The works have been divided based on communities. Non- SC communities are not going to work in SCs area. It is observed that the new dimension of discrimination has been constructed under MGNREGA.

The major principles of MGNREGA are; tree plantation and horticulture works can be taken up in common and

forest, lands, road margins, canal, bunds, tank foreshores and coastal belts which can be done without any disparities among the society of village. All the tree plantation and horticulture works took at the place of upper caste residences. The upper caste people deliberately denied rights of SCs. Tree plantation and horticulture will help to future generation for everyone without any discrimination. At the same time, upper caste people preventing that the coming generation of SCs communities will not access to commons. That's why upper caste people do not allow to tree plantation at SCs residences. Under this study, it is observed that the creation of new ponds has not been constructed at SCs residences. New ponds were constructed at upper caste people's residence.

## CONCLUSION

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) came into being in 2006 as a large-scale rural employment guarantee programme aimed at eliminating rural poverty, social inclusion and financial inclusion. This programme helped to establish rural economic transformation. But it failed to establish social transformation. Everyone agreed to call this act as 'right to work' however, present research lunches questions that "right to work for whom, for what, for why". From the evidence, I observed that everyday discriminations have been increasing against SCs in rural areas through MGNREGS. India had launched many schemes in favour of SCs for improvement of their economic, environmental and social situations of the people in rural area . But they are facing discrimination and atrocities. The present study tested the null hypothesis and it is accepted that just social orders cannot be constructing through MGNREGA in a rural area.

## ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

## HUMAN AND ANIMAL RIGHTS

No animals/humans were used for studies that are the basis of this review.

## CONSENT FOR PUBLICATION

Not applicable.

## CONFLICT OF INTEREST

The author declares no conflict of interest, financial or otherwise.

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## REFERENCES

- [1] Office of the registrar general & census commissioner. Primary census abstract data: Census 2001. New Delhi: Ministry of home affairs, government of india 2001.
- [2] Office of the registrar general & census commissioner. Primary census abstract data: Census 2011. New Delhi: Ministry of Home Affairs, Government of India 2011.
- [3] My Agricultural Information Bank. Objective of rural development. My agricultural information bank 2018. Available from: <http://www.agriinfo.in/default.aspx?page=topic&superid=7&topicid=1445>
- [4] Gangopadhyay D, Mukhopadhyay AK, Singh Pushpa. Available from: <http://www.nistads.res.in/indiasnt2008/t6rural/t6rur3.htm> Rural development: A strategy for poverty alleviation in India. 2018.
- [5] Government of Tamil Nadu. Mahatma gandhi national rural employment guarantee act, 2005, frequently asked questions on MGNREGA Operational Guidelines-2013. Chennai 2014. June
- [6] Government of Tamil Nadu. Government of Tamil Nadu MGNREGA operational guidelines-2013, Chennai; Tamil Nadu 2014. June
- [7] Directorate of census operations, district census handbook: Dindigul district of Tamil Nadu, census 2011. Tamil nadu, chennai 2011.
- [8] Government of Tamil Nadu. Department of rural development and panchayat raj Mahatma Gandhi national rural employment guarantee Act, 2005, Operational guidelines-2013 . Chennai 2014.
- [9] Mahatma gandhi national rural employment guarantee act, 2005, Chennai; June 2014.
- [10] Planning commission, eleventh five year plan 2007–2012, New Delhi, India: 3. 2008.

- [11] Government of India.. Mahatma gandhi national rural employment guarantee act, 2005. New Delhi June 2005.
- [12] Government of Tamil Nadu. MGNREGA operational guidelines-2013, chennai; June 2014.
- [13] PACS. Inclusive social audits 2018. Available from: <http://www.pacsindia.org/projects/mgnregaemployment-rights/social-audits-and-asset-maps>
- [14] Ranjithkumar A, Kumar SR. Sustainable development through social justice: A study with special reference to village panchayat in tamil nadu. New Delhi, India: Excel India Publishers 2017; pp. 1-9. Sustainable development goals: Perspectives from the indian villages.
- [15] Palanithurai G. State of dalits in Tamil Nadu 2013. Available from: <https://www.livemint.com/Opinion/3IRPDh135i0ZQTp2GzuJ8H/G-Palanithurai--State-of-Dalits-in-Tamil-Nadu.html>
- [16] Thara Bhai L. Gender, Caste and politics in rural tamil nadu Inclusion and exclusion in local governance. New Delhi, India: Sage Publications India Pvt Ltd 2009; pp. 263-84.

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