



Abhipsha Chakraborty

Looking Into the Relationship between Fish Biodiversity and Profitability of the Fishery

ABSTRACT:

Over-exploitation of the fisheries and loss in fish biodiversity has been a major concern among researchers and policy makers. Exertion of excessive effort and other factors like water pollution, price signals adversely affect the biodiversity of fish species and threaten the sustainability of the resource. This study carries out a micro case-study in Digha region of West Bengal. The aim of this study is to see how the fish harvest gets affected in the Digha Mohana fishery using Bioeconomic models and ultimately links biodiversity of fish species with the profitability of the fishery. In an effort has been made to model the effect of water pollution on the loss of fish biodiversity and its ultimate impact on the total fish harvest in the Digha Mohana (Estuarine) Fishery, an environmental quality variable and an economic biodiversity index is introduced in the aggregated Gordon-Schaefer model and then Schnute's method has been applied to estimate the parameters. Following this, alternative property right regimes are introduced in the study along with different economic biodiversity levels; them being high, current and low. Finally, a sensitivity analysis is carried out by changing the level of discount rate in order to check its impact on the fishery's optimal profit for the three different biodiversity scenarios. Discount rate has the potential of affecting the resource allocation between conservation and harvesting. This analysis reveals that the Net Present Value of profit reduces as the discount rate rises. Conservation of fish biodiversity is necessary as it helps in maintaining the value of the fishery. So, the fishery cannot be made sustainable by just keeping a check on the level of water pollution. The fishermen and policymakers must consider the fact that the sustainability of the fishery can be put in danger by economic biodiversity degradation. In this study it is found that there is a conflict between maximization of profit at the Digha Mohana Fishery and conservation of its economic biodiversity. Keywords: Biodiversity, Economic Biodiversity, Fishery, Property Right Regimes, Profit Maximization, NPV of profit

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Akanksha Singh

CRITICALLY EXAMINING THE PLASTIC BAG REGULATIONS IN INDIA : IS IT A SUCCESS ?

ABSTRACT:

With nearly 1 trillion annual consumption of plastic bags spread across the world due to their multifaceted and convenient characteristics. Due to the existence of associated market failure with plastic menace calls for the emergence of government interventions to address the plastic issue. Several countries, as a result, have successfully been able to reduce the plastic consumption by adopting certain policy measures. In India too, there has been the formulation of plastic ban policy since 1999. Despite the legislation have been in place, the country's plastic consumption instead of coming down have increased in the past two decades –which is why this research is undertaken. Therefore, the study attempts to examine the several plastic bag regulations which have been in place and tries to find an answer to –why is it so that despite the policy measures been adopted, the plastic use is rampant? The study recognizes the underlying factors behind such government failure to correct for the market failure. Moreover, some international comparisons are drawn to attain some practical insights in respect to the policies indifferent countries .The study is been divided such that –chapter 2 briefs the literature stating the general factors which lead to policy failures as well as the factors contributing to the policy failures in particular relation to the plastic policies in Indian context. Chapter 3 talks about the detailed analysis of the legal judgements that came up against the non-implementation of plastic ban policy–so as to identify the root causes behind the implementation failures. Chapter 4 covers the different countries experiences in relation to their adoption of plastic policy measures and how, if possible, can the lessons be drawn in Indian context for the betterment of our policy structure and its implementation.

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Akshay M

Payment For Ecosystem Services through Contract Farming: A Study of the Natural Rubber Sector in Kerala

ABSTRACT:

The current phase of globalization and neoliberalism has triggered widespread fluctuation in price, specifically in the agriculture sector. The perennial plantations like natural rubber seem to be most affected with such price volatility. With high initial cost and the uncertain economic gains in the future, the sector has stagnated from the previous (flourishing) protected period. This being said, the plantation provides a host of ecosystem services of which carbon store and latex services are predominant. These services are expected to benefit not just locally but also globally. Apart from the direct carbon store from natural rubber plantation, the latex extracted has the potential to substitute the crude oil derived synthetic rubber. With this dual role in mitigating climate change, payment for ecosystem services(PES) seems to be a viable option as opposed to the previous inefficient and (or) ineffective interventions. In comparison to all 'possible' interventions, the contract between a natural rubber plantation and tire company for the bundled ecosystem services of latex and carbon store seem to be the most efficient and effective alternative. Motivated from contract farming in Punjab and Haryana, this intervention is expected to not just benefits the plantation owner and the tire company; the economic gains are expected to trickle down to the local tapper, the State and even global organizations like UN. The State is expected to gain additionally through multiple positive ripple effects on the INDC targets. While the study identifies, lack of a possible buyer and inadequate infrastructure, accounting and verification system as limiting factors for the adoption of PES in India; these limitations are countered through careful transaction cost minimization and informed designing of PES. The incentives for both the State and the Tire companies are expected increase the possibility of the implementation of the prescribed PES intervention.

Keywords: ecosystem services, efficiency, natural rubber

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Ankit Ojha

To Analyze Whether Farmers Are Willing To Pay For Electricity That Will Ensure Required Water Supply for Agricultural Crops During Kharif and Rabi Season.

ABSTRACT:

This study tries to discover how the free electricity regime which was started in the Punjab with the aim of increasing income of farmers through providing free electricity for their tube wells resulted in a scenario in which power providing utility PSPCL are making huge losses, also state government is making huge expenditures in terms of overall budgets to pay for farm power consumption by the farmers in the way of subsidy but all these things are not helping farmers to maintain their irrigation schedule and they have to use diesel to maintain their irrigation schedule. It is only resulting in the rationing of power supply, power coming with frequent fluctuations and due to irregularity and unscheduled power supply and as the power supply mostly coming in night there is unsustainable groundwater use by the farmers which is making it difficult for farmers to chase down water as water level declines as they have to bear huge cost in increasing their tube well depth. This study tries to discover if a farmer in Punjab region is ready to pay for better electricity services that will ensure required irrigation during Kharif and Rabi season on a predetermined time with better quality and quantity. This study uses the contingent valuation method to measure farmers' willingness to pay for improved electricity services. This study found out that farmers in Punjab are ready to pay if electricity comes during predetermined time and in day with good quality so that they can save cost in terms of less motor burnout, reduction in the speed at which they are increasing the depths of their tube wells etc.

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Anmol Sehgal

Evaluation of Health Insurance Schemes in India with focus on Maternal and Child Healthcare

ABSTRACT:

Developing countries since a decade have tried to make provision through policies to make healthcare services affordable for all under the guidelines for Universal Health Coverage (UHC) with a sincere focus on people living Below Poverty Line (BPL). These policy provisions have come through indirect transfer of money for treatment of various diseases via “Health Insurance Interventions” in India. Due to the financial constraints and not being able to avail treatment at the right time, many people especially women and children witness unforeseen conditions with respect to health indicators of maternal mortality rate (MMR) and infant mortality rate (IMR). The current study tries to analyse the impact of rising central and state government funded health insurance scheme on the out-of-pocket (OOP) expenditure of the poor and vulnerable households with focus on maternal and child healthcare. Further, the aspect of quality care is also studied. The same has been empirically analysed in two stages; secondary data analysis and primary data analysis. Taking account of the aspect of health insurance schemes via IHDS survey for 2004-05 and 2011-12 provides an overview of status of health insurance schemes and their effects. Further, case specific analysis of one of the most comprehensive scheme in Rajasthan i.e. Bhamashah Swasthya Bima Yojana (BSBY) has been incorporated to understand the impact of the intervention on women and children through delivery cases in an urban village of Jhalana, Jaipur. The outcome variables considered for the study are; OOP expenditure, quality of care received considering the prescribed number of antenatal check-ups, number of days of hospitalisation after delivery and level of satisfaction from availing services at the hospital. Using the methods of impact evaluation in terms of logistic and log-linear regression models inferences were drawn. Along with this Propensity Score Matching (PSM) has been used for primary dataset to consider the average treatment of treated (TOT) effect. Results in terms of secondary dataset showed a reduction in OOP expenditure for only the people in medium income group (72,000 to 1,32,000 per annum). For the primary survey, results showed a reduction in OOP for women getting delivery done through BSBY. Quality of care also improved on having a health insurance benefit affirmed by secondary and primary data analysis

Key Words: Out-of-pocket Expenditure, Quality of Care, Health Insurance, Bhamashah Swasthya Bima Yojana, Maternal Mortality Rate, Infant Mortality Rate

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Anuja Malhotra

**Applying Industrial Ecology Principles to make Cement Industry in NCR of Delhi
‘Greener’-Possibilities and Challenges**

ABSTRACT:

The cement industry in India has been categorized as one of the highest pollution generating industries by the government, and with growing infrastructure requirements, the production of cement in India, which ranks second globally in cement production, can only rise. This could lead to pollution and further extraction of ‘resources’ for input-use. However, as a “Scavenger Industry”, cement production has the potential to “exchange” by-products, recycle, reuse, and innovate for their input requirements and waste outputs, instead of treating the environment as a “waste reservoir”. To address this, the concept of Industrial Ecology (IE) has been looked at, where industrial systems are re-imagined by imitating aspects of natural ecosystems. IE encourages the ‘exchange’ of by-products within industries to reduce pressure on the environment. Three models have been presented in which waste exchanges have been illustrated—use of fly ash from power plants as input in cement, use of waste plastic as fuel in the burner (known as Refuse Derived Fuel), and using crop residue as fuel in the burner (in the form of briquettes). It has been argued that the social benefits of implementing these exchanges are high and there is a case for the state to intervene and drive these practices. State may act as a match-maker to facilitate the “exchange” of by-products between industries, so as to reduce the environmental impact and gain social benefits.

Keywords Industrial Ecology, Closing Material Loops, Cement Industry, Industrial Waste Recycling, Delhi Pollution.

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Ayushi Jain

Valuation of Cultural Heritage: A case study of Red Fort

ABSTRACT:

Heritage has been a prominent part of human history and there has been an increasing attempt to preserve heritage sites across India. Red Fort, World Heritage Site, Delhi has been undergoing several changes during past few years in order to restore the archeological remains of the site. This study aims at ascertaining the cultural heritage value using Contingent Valuation Method without assessing the economic impact of cultural heritage site. It is an attempt to measure ‘culturality’ based on the opinion of people by asking them their Willingness to Pay(WTP)for the restoration of Cultural heritage site, Red Fort. The purpose of this study is to find the Total Economic Value(TEV) of Red Fort. In order to find the TEV, primary survey for 154 visitors at Red Fort was done. It was found that bid price, income and experience are the most significant factors influencing the WTP decision of visitors visiting the Red Fort. It was found that on average visitors are willing to pay INR 62 as entry fees at Red Fort.

Key Words –Heritage, Culture, Total Economic Value, Contingent Valuation Method, Logit Model, Non-Market Valuation

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Deepanshi Gilhotra

Assessing The Effect of Household Air Pollution on Neonatal Mortality in India

ABSTRACT:

Household air pollution is a major health hazard especially in a developing country like India. Majority of the rural population and even a section of the urban population continue to rely on unclean sources of energy for cooking. New-borns within one month of age are even more prone to the harmful effects of household air pollution. Hence, this study aims to examine the effect of household air pollution and other household environmental factors on early neonatal and neonatal mortality in India. The dataset employed for the study is “National Family Health Survey”(NFHS) -4, 2015-2016. A cohort of last five years is taken, that is, 2011-2015. Descriptive analysis is carried out using frequency distribution and percentages. Bivariate association between the child deaths (early neonatal and neonatal deaths) and explanatory variables is examined using Chi-square tests. The causal relationship between child deaths and household air pollution and environmental factors are examined using multivariate logistic regression models. Six regression models are run that analyzed early neonatal and neonatal deaths each for All India, Rural India and Urban India. The results reveal that cooking fuel which is a major cause of household air pollution significantly affects early neonatal and neonatal deaths in rural areas. Use of unclean cooking fuel increases the chances of early neonatal and neonatal deaths by 16% and 18% respectively. Majority of rural population still are heavily dependent on unclean fuels for cooking which is resulting in hazardous outcomes in terms of the health of the mother and child. As far as urban population is concerned, cooking fuel does not significantly effect on early neonatal and neonatal deaths but a few household environment factors like place of kitchen, open defecation are observed to have significant effect on neonatal deaths. Thus, the study contributes in diverting the attention to potential household factors that are responsible for early neonatal and neonatal deaths and channelizing the health schemes like “National Health Mission” in the direction so as to minimize the health risks to early neonates and neonates.

Keywords: household air pollution, early neonatal, neonatal, India, household environment

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Divyanshi Vohra

Value-Action Gap in the Context of Choice of Mode of Transport

ABSTRACT:

People make choices every day. It is generally considered that knowledge of a certain choice pulls us or pushes us away from that choice, but many times we see people behave in a way opposite to their attitudes on the subject. This difference is called the value action gap and is the main topic of exploration of this thesis. We consider the value action gap in the context of choice of mode of transport, in the city of New Delhi. Big metropolitan cities of the world are facing a similar problem of increased congestion on roads. An important problem is the alarming increase in air pollution, 12% of which is attributed to vehicular emissions (ICCT Report, 2019). Hence, I think it is important to study whether the people of Delhi give importance to pollution emissions while choosing their mode of transport. Literature on transportation choice comes under the subject matter of urban travel mode choice modelling or travel behavior. “To promote shift to energy efficient modes, it is required to bring change in travel behaviour of the people. Thus, studying travel behaviour forms an essential component in urban transport system to bring change in the system for improvement” (Bajracharya and Shrestha, 2017)

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Diya Dasgupta

Meeting India's Electricity Demand in 2030

ABSTRACT:

India declared in its Intended Nationally Determined Contribution(INDC), its goal of decreasing the emission intensity of GDP by 33-35 percent from the 2005 levels, by the time we reach the year 2030. The plans that will be adopted for delivering electricity in the years to come will have an impact on the emissions trajectory for the country. The power sector alone contributes to roughly 50% of total CO₂ emissions in India.(Central Electricity Authority 2018). Thus, the focus of this thesis is limited to the Indian electricity sector. The study aims to answer the question “What is the least cost method of meeting India’s electricity demand in 2030, subject to certain supply side constraints and carbon emission targets?”. The idea is to devise a strategy to meet demand, both in terms of energy and load and at the same time keep the emissions under control. The study is a two-part analysis, where Part 1 deals with estimating electricity demand in 2029-30 in India. Based on past literature, the factors that are known to affect electricity demand and that have been included in the study are, Real GDP, Population, WPI for electricity and Rainfall. In addition, a time trend was also added along with adjustments for T & D losses and demand for electric vehicles. The final estimated figure for electricity demand was 2351.505 BU. Part 2 of the analysis deals with an optimization exercise, where one is trying to minimize the cost of generation from coal, lignite, gas, hydro, nuclear, wind and solar. The cost at the generation level in 2030 was found to be Rs. 4.01 per kWh. In addition, it was also found that while following the proposed generation pattern, the country will be able to meet its target of achieving at least forty percent generation capacity from renewables.

Keywords: Emissions, Electricity Demand, INDC

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Drishti Garg

Assessing the Alternate Employment Schemes for Safai Karamcharis

ABSTRACT:

Sanitation workers are individuals who put in extensive manual labour in collecting and disposing of waste, thus protecting the environment,”(WEIGO). There are several sewage worker deaths reported in the recent past. These workers went down the drain without any professional training or safety gears. The work of sanitation is primarily carried out by the Valmiki community. They face several challenges to carry out their daily lives. National Safai Karamchari Finance & Development Corporation (NSKFDC), under Ministry of Social Justice & Empowerment (MoSJ&E), Government of India (GoI) initiated two schemes to empower these depressed souls to breakaway from their traditional occupation and take up alternate income generating activities. The scheme provides vocational training and One-Time cash assistance to opt for alternate employment. This study aims to evaluate the impact of such schemes on the target population i.e. Sanitation Workers. In the initial phase of the study, a literature survey was carried out to understand the depth of the problem surrounding these workers. Further, a primary survey was conducted in the states of Rajasthan and Haryana to establish a comparative analysis between the beneficiaries and non-beneficiaries of the scheme. A detailed data analysis and results have been presented in the study. Thereafter, the problems have been identified and addressed to give appropriate recommendations to improve the overall impact of the programme.

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Garima Jasuja

Resilience of Rishikesh's Social-Ecological System towards rising tourism: A cost-effectiveness analysis of beach camping ban

ABSTRACT:

The linked social-ecological systems have certain capacity to absorb external shock coming to them and the degree to absorb such shock is reflected by the resilience of these systems. Continuous shocks, however, lead to irreversible changes in these systems at times. Such a concept has been widely used for tourism-based linked social-ecological systems which are complex adaptive systems. One such system is the social-ecological system of beach camping in Rishikesh. Promoting ecotourism at the natural fragile area of 36 km stretch from Kaudiyala to Rishikesh, beach camps had gained a prominence over a period of two decades till it ultimately got banned. The policy intervention took place in a response to mushrooming of beach camps due to tourism influx in the ecologically sensitive area. Given that tourism can be a significant force of structural changes in this tourism-based system, the aim is to study the social and ecological linkages in the system to facilitate analysis of ban as a policy intervention. The framework for assessing resilience of social-ecological system given by Resilience Alliance (2010) has been adopted to construct a conceptual model and further, cost-effectiveness analysis is done to identify the least costly policy intervention to fulfil the objective.

Keywords: Social-ecological systems, resilience, complex adaptive systems, cost-effectiveness, policy intervention

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Jitesh Yadav

Estimating air pollution related health damage of traffic policemen in Faridabad.

ABSTRACT:

According to a pulmonary function test of traffic policemen (TP), at least one in every seven traffic policemen suffers from respiratory disorders. TP spend anywhere between 12 and 14 hours a day managing traffic on the roads where air pollution levels average three to four times the safe standards. An increased risk of cancer has also been reported in occupations with heavy exposure to traffic-related pollution. The National Human Rights Commission stated that state governments don't provide any extra allowances or health facilities to the traffic police personnel. Therefore, the research question that this study tried to address is how does occupational exposure to air pollution impacts the health of a group of policemen in Faridabad as compared to a group of policemen who are not exposed to occupational air pollution. In other words, the study tries to find the impact of occupational exposure to air pollution on traffic policemen in Faridabad. This was done using impact evaluation analysis where the treatment group or the group exposed to air pollution are 48 traffic policemen while the control group or group not exposed to air pollution during work are 132 other policemen excluding traffic policemen. Propensity Score Matching method was used to find the appropriate matching policemen from control group for the treatment group. TP suffer from 10.40 more disease on the disease scale as compared to non-TP. The mean disease score of all the policemen was calculated to be 3.8. So, the difference in disease score between TP and non-TP is almost three times the mean disease score across all policemen. It was also found out that usage of masks reduces the total disease score by 5.192 points and reducing the standing time of TP by one hour in a day decreased disease score by 0.223 units

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Kanika Verma

Do Formal Institutions Enhance the Adaptability of Communities under Van Panchayat to Climate Change?

ABSTRACT:

The world at the moment is experiencing climate change in terms of increasing temperature and erratic rainfall patterns. India is no exception to this problem of climate change. India being a developing country is extremely dependent upon the natural cycles. The state of Uttarakhand in India is one which is blessed with abundance of flora and fauna and dense forests. There are villages across Uttarakhand which are situated around the forests. The communities of these villages take care of the forests and derive local goods for their livelihoods. These legally demarcated villages are known as van panchayats. With this problem of climate change it becomes important for the policy makers to sit down and curate the right policies. The present study aims to see how the formal institutes in Uttarakhand help the communities under van panchayats adapt to the problem of climate change.

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Kritika Khanna

Analysing Consumer Behaviour towards Implementation of Carbon Labels at a University Canteen

ABSTRACT:

Climate change has become a pressing issue in the world and India is one of the major contributors to overall climate change. Food sector in India contributes 18% to the total GHG emissions and so, these food related emissions need to be reduced in order to achieve the SDG-13 targets set under the recently ratified Paris agreement. Carbon labelling of food products is being considered as one of the measures to do the same. However, consumer responses to carbon labels have never been studied in India. So, in this study a carbon label was designed and a real life experiment was conducted in a university canteen in two phases—a reference phase (before label implementation) and a label phase (after label implementation). Data regarding the demographic characteristics of the consumers was also collected since they were previously found to have an impact on the consumption behaviour. Quantitative data was collected in both the phases via brief questionnaires. Qualitative data was collected via focus group discussion. Binomial and multinomial logistic regression was run to find the effect of these demographic variables on the odds of a person switching to a low carbon meal. It was observed that after information provision through labels and posters, 30% individuals changed their consumption behaviour in favour of low carbon meals. More females were found to change their consumption behaviour as compared to men and non-vegetarian eaters were found to be less reluctant to change their behaviour as compared to vegetarians. According to the focus group discussion, people were noticing, understanding and discussing the carbon labels but the information provided by the label made a very small proportion of individuals actually switch their food choices in favour of a low carbon meal.

Key words: Climate Change, GHG Emissions, Agriculture, Carbon Label, Carbon Footprint, Demographic Variables, Attitude-Behaviour Gap.

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Meghaa Gangahar

Consumption-based Approach towards Resource-use Indicators

ABSTRACT:

Resources are extracted from the earth in order to fuel human activities. This extraction process involves material and energy flows originating from the ecological system into the socio-economic system embedded in it. Excessive extraction of resources causes a strain on the natural environment that is responsible for provisioning of these resources along with other ecological activities. In order to sustain human economic activities, which consist of production and consumption functions, the efficient use of resource inputs must be ensured. The material flow accounting framework can be used to chart these resource flows along the socio-economic processes. However, the products that are produced using these resource inputs may not be consumed within the same region. This requires an accounting approach that looks at the final demand side of resources as well as the supply side. The consumption based accounting looks after the former while production based accounting looks after the latter. The upstream resources along the production process can be considered to be embodied in the final product that is consumed. Some regions are net producers of embodied resources, whereas others are net consumers of embodied resources. An Environmentally Extended Multi-Regional Input-Output (EE-MRIO) analysis is undertaken using EXIOBASE 3 for the year 2011. The production as well as consumption based indicators are derived for China, India and the United States of America. The results of the study indicate towards a significant difference in indicators with a shift in the scope of accounting between production based and consumption based. The indicators are broadly consistent with the concept of a higher production burden associated with 'developing' countries and a higher consumption burden associated with 'developed' countries. Key words: Resource use, Material intensity, Energy intensity, Material and Energy Flow accounting, Multi-Regional Input-Output Analysis, Ecological burden, Embodied trade.

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Poorva Sardana

Dutch Disease: A case study of India and Australia for selected sectors

ABSTRACT:

India and Australia are endowed with enormous reserves of minerals and ores. Of all ores, these two economies are the leading exporters of two prime base metals; Iron and Aluminium which are heavily traded in international markets. This paper aims to diagnose whether symptoms of Dutch Disease are present in these economies due to exogenous shocks in the world annual real prices of both the commodities by employing a Vector Auto-Regression (VAR) model with Impulse response functions for the period from 1980-2016. Followed by VAR, the study computes Revealed Comparative Advantage Index (RCAI) for the two selected commodities in order to trace the changing fundamentals of the export basket of these economies when exogenous shocks in prices of iron ore and aluminium occur. The results of the analysis suggest that both iron ore and aluminium are responsible for Dutch Disease effects in India by adversely affecting growth rate of Gross Value Added (GVA) by the Services sector. On the contrary, it appears that only iron ore is responsible for Dutch Disease effects in Australia. The strategic policy implications in order to manage the positive impact of boom and its repercussions on other sectors could be fiscal adjustments by dampening aggregate demand or monetary expansion leading to fall in interest rates so that the economy could gain from the benefits of a booming sector and manage its repercussions on the lagging sector. Out of the two policies, the policy chosen by the policy makers will depend upon the economic situations which the country is facing at that time

.Key Words: Dutch Disease, Exports, Real appreciation, Factor Reallocation, Exports, Exogenous price shocks, Comparative Advantage

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Priya Anand

Impact Assessment of Inland Fishery Subsidies in Bihar

ABSTRACT:

Fishery sector is one of the important source of employment, income. It is one of the major source of revenue for many countries. Inland fishery sector's contribution to fish production of India is around 65%. Bihar has lot of potential in fish production. Despite fishing activities in this state is done in traditional ways, Bihar rank third in the production of inland fishes after Andhra Pradesh and West Bengal. There is huge gap between the demand and supply of fishes in the state. To stimulate the production of fishes in the state, the state government at present provides subsidy for the production of fishes. This subsidy program knows Mukhya Mantri Matsya Vikash Pariyojna. This study has use the Propensity Score Matching technique to know the impact of fishing subsidy. Primary survey was conducted in Muzzaffarpur district of Bihar. Study found out that traditional fisher folks are not getting subsidy in large number. The result of study indicates that this subsidy program has positive impact on the production of fishes in the state. This is the first time that such impact evaluation for this subsidy program has been studies, therefore the results of this study will be useful for the policy makers.

Keywords: Inland Fisheries, Mukhymantri Matsya Vikash Pariyojna, Impact Evaluation, Propensity Score Matching

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Priyanka Chakarwarty

An Alternative to ban on Mining in Aravalli's in Haryana

ABSTRACT:

Mining is an economic activity that causes extensive amount of damages to the environment. The problem that is presently receiving major attention in mining context is the impact of abandoned & orphaned mines on environment. These include natural habitat destruction, landscape changes, instability & degradation of land, contamination of soil etc. Although directives, regarding reduction of such environment impacts are present, but they are hardly followed because of lack of proper enforcement & hence moral hazard is imposed. In order to devise a way out of moral hazard several policies have been applied in international context, but solving this problem is not easy because of the characteristic of temporal separation. In several countries it has been treated using a bonding & an insurance system. But this has several limitations as they increase the cost of mining activities, the way the amount of bond is calculated etc. Thus an approach of property rights has been used in the paper to solve the problem. This approach incentivises the mine owners to undertake land reclamation activities. The paper also presents the way the amount of transferring such property rights should be calculated because the land where mining activities are undertaken could have several other economic uses.

Key words; moral hazard, land reclamation & rehabilitation, performance bonding, property rights, Net present value

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Radhika Arora

Impact Evaluation of Pradhan Mantri Krishi Sinchai Yojna

ABSTRACT:

Due to increasing population and limited resources, there is constant pressure on the Indian economy to increase the agricultural productivity by introducing better farming techniques that not only increase the productivity but also reduce the excess consumption of natural resources like water. Drip irrigation, sprinklers, pivots and rain guns have recently been introduced in the irrigation infrastructure that has numerous benefits. A national level policy was introduced in 2014 with the aim to expand area under irrigation, increase agricultural productivity and minimize water wastage called —Pradhan Mantri Krishi Sinchai Yojna (PMKSY)l. Under this scheme, subsidy is provided to install drip and sprinkler systems to the marginal and general farmers having landholding size up to 5 acres. This paper analyzes the impact of PMKSY on the on-farm profit and cropping intensity of the horticulture crops growing farmers in Haryana. Primary survey was conducted for the data collection from the beneficiaries and non-beneficiaries of this policy for the year 2017-2018 and Heckman Sample Selection Model has been used to estimate the results of the intervention. The results show that drip irrigation has significant positive impacts on the on-farm profit and the cropping intensity of horticulture crops. Beneficiaries of drip irrigation systems had higher on-farm profit and higher cropping intensities as compared to non-beneficiaries. Hence, there is need to promote these scientific techniques of irrigation in order to achieve environmental sustainability and higher agriculture output.

KEYWORDS: Drip irrigation, Micro-irrigation

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Radhika Malik

Analysing compensating wage differential for occupational health risks of agricultural laborers

ABSTRACT:

Agriculture is very appropriately considered as the ‘backbone’ of the Indian economy, generating employment opportunities for fifty per cent of our population and contributing more than the world average to the Gross Domestic Product of our country (Miles, 2008). However, due to weak legislations related to workplace safety, workers have to bear the brunt of injuries of varying degree, sustained by them while working on-field. The study aims to analyze the value a worker places on his/her life, in pursuit to reduce a small amount of occupational risk faced by them. The study thus sets out with a focus to examine whether the agricultural workers are given a wage premium to combat the injury (or fatality) risk being faced by them or not. The study makes use of the Theory of compensating wage differential, conceived and established by the famous political economist and philosopher, Adam Smith, who proposed that a worker’s job characteristics would have an impact on the labor market equilibrium and hence, workers need to be compensated in the form of a higher pay for enduring on-the-job risks. In its introductory stage, after the seriousness of the problem is realized, a suitable research area has been chosen, where the study is conducted via a multi-stage random sampling process. The questionnaire had been designed in a manner that it captures the profile of the farm laborers, their asset-related information, health-related information, compensation and mitigation related information in detailed sections attributed to each one of them. On completion of the primary survey, in the next step, the workers have been sought into different categories, owing to their risk exposure to different tasks performed on farm fields. Further, econometric regression tools have been employed to analyze the wage-risk tradeoff and existence of wage premium (if any) between workers of different categories. The results have then been interpreted for empirical understanding. As an adequate conclusion to the study, significant drawbacks in the existing legislation on Occupational Safety and Health in India are highlighted and improvements have been suggested over the present scenario.

Keywords: Occupational health hazards, vulnerability, job characteristics, wage-risk tradeoff, value of ‘statistical’ life (VSL)

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Sampreet Kaur

Economic and health implications of a landfill site: A health production function approach

ABSTRACT:

This study is aimed at discovering the negative externalities a landfill imposes on public health. For this purpose, the study uses a health production function to estimate the health impacts on the people who live closer to a landfill. This is done by collecting the data of 150 households through a primary survey in the colonies close to a landfill. The health production function is a theoretical model which treats various factors such as social factors, economic factors as well as environmental factors as an input in the health production system. And for this firstly, the colonies are identified in such a manner that they have similar socioeconomic demographics, and the only dissimilarity in these colonies is the distance from the landfill site. The farthest colony among the three is taken as a base colony so that all things (other than the landfill) affecting health can be controlled for. It was found that the people living closest to the landfill site are at a 5.5 times more risk of falling sick as compared to the base category (living at a safe distance from the landfill site). And for the colony located at a 500 meters distance suffered around 3 times the risk of falling sick. All these findings make it an important to implement precautionary requirements for constructing a landfill at least 1 kilo metre away from the landfill site. A total of five crores and fifty lakhs per year is the economic loss to the people living in Rajveer and Gharoli Colony

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Sanchit Sethi

Energy, Capital and Labour Substitution: Case of Indian Firms

ABSTRACT:

The evolution of industries has relied, largely, on substitution of capital for labor. The traditional academic debate on substitution has revolved around capital and labor. This literature can be subdivided in two categories-first that examines when capital and labor can be substituted, and second, studies the impact of capital and labor substitution on efficiency and output. However, different strands of substitution literature have evolved over time. One such strand is inclusion of energy into the analysis. The motivation for the same is-if energy and capital turned out to be substitutes, increasing energy price will facilitate capital accumulation. Otherwise, a complementary relationship implies rising energy prices will hamper capital accumulation. This thesis is an attempt to answer the question-Does the technology used by Indian firms to replace labor, also replace energy? Or do firms need to choose between the two-one that saves labor; other that saves energy. This is done by estimating elasticity of substitution. Using a trans-log cost function, Morishima Elasticity of Substitution has been estimated with ASI pooled cross-sectional data covering 1999-00 to 2014-15. The core result is Capital turns out to be substitute to Energy as well as Labor. The technology that has been employed to replace labor is also substituting energy. The analysis has also been extended to include two applications-(i) categorizing states on basis of rate of growth of electricity tariffs-expected result is that firms in state with high tariff rate of growth will exhibit relatively high substitution. However, substitution between capital and energy was almost similar for firms in both groups-high and low rate of growth of tariff-which goes against the expected result.(ii) Similarly, classifying states either as states with rigid labor laws (that do not permit easy hiring and firing of workers)or states that have flexible labor regulations(allowing for easy hiring and firing of labor). Expected result is that firms in pro-employer states will exhibit relatively high substitution between capital and labor. Unfortunately, this was not the case.

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Sanya Mehra

Impact of WASH in Schools Intervention on Hygiene & Sanitation Related Behavioural Changes –A study on slums in Delhi

ABSTRACT:

The study aims to find the causal impact of the WASH in Schools intervention, initiated by Government of India, on the hygiene and sanitation related behavioural changes among slum dwellers. This study is based on two slums of Delhi. Firstly it discusses the importance of providing WASH facilities to school going children and secondly focuses on the motives to do so. This intervention believes that school students can become ‘ potential agents of change’ and can bring a change in perception as well as behavior of their family and friends towards the need of maintaining hygiene and consuming cleaner water and food. The study further focuses on figuring some factors that have been not been considered as of now which might have a significant role in bringing a change in hygiene related perception .Difference-in-Differences (DID)method has been used to compare changes in outcomes before and after the intervention between the treatment and control groups and to come up with a DID estimate which can be interpreted as the causal impact of the intervention. Four major indicators of hygiene related behavioural change are been studied namely Change in Maintaining Menstrual Hygiene, Improvement in source and quality of drinking water, Increase in awareness regarding use cleaner toilets and Improvement in hand washing practice with soap at crucial times. These outcome variables have been regressed on various demographic characteristics. Conclusions have been that in the last 3-4 years people have become more aware regarding importance and ways of maintaining hygiene in all aspects. I also conclude from the study that behavioural change has occurred in younger and more educated mothers .Also the study shows up an interesting aspect that although intervention at school level is necessary to bring a change but it cannot be assumed that introduction of an intervention will surely lead to a change in practices in reality as in many cases it could lead to a sheer change in perception due to financial inability to convert that ‘will’ to change into an ‘actual’ change. Lastly some suggestions have been made which might help in achieving the real goal of such interventions.

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Shivangi Gupta

Sustaining the Sugarcane Value Chain in India

ABSTRACT:

India needs to grow at a sustainable path of development. Globally, it has been accepted that there arises a need to shift in the regime towards resource-use sustainability. For a nation to grow, energy has a vital role to play. Biofuels have been recognized as most important renewable source of energy since these are produced from the co-products of sugarcane. In the recent years, Government of India, have proposed 5% mandatory-blending of ethanol with transport fuels (as this does not require modification in transport-engine). The thesis is an attempt to evaluate whether the sugarcane value chain is environmentally sustainable in India. The study is a value addition as it dissects the value added by material and energy input-output in terms of carbon dioxide emissions at different stages in the chain. That is, stage by stage, sustainability has been measured. The chain here involves various stakeholders at each stage classified as: sugarcane farming, transportation of biomass, sugarcane processing at sugar factory, ethanol production at distillery. The multi-functionality problem to allocate environmental burdens at mill-level between sugar and its co-products has been solved through system expansion and economic allocation. Carbon emissions used as a sustainability indicator has been employed to estimate whether there is net carbon output (net sequestration) or net carbon input (net emissions) at each stage. Based on the allocation ratio between sugar and molasses of 27.56 and conversion efficiency factor for electricity generation of 0.25, there was net carbon sequestration at farm-level as well as at sugar factory of 41,248.95 kgCO₂/ acre and 1499.08 kg CO₂/ 1000kgs cane processed. Most influential factors have been recognized as trash burning, nitrogen-fertilizer, transportation of biomass and irrigation through water pumps. However, at distillery there were net carbon emissions indication it to be unsustainable. Herein, the market value of molasses plays a vital role. Also, a comparison between fuel versus food crops has been performed to analyse whether increase in land area under cane affected area under food crops. Policy suggestions have been made to overcome the 'inefficient' spots so as to improve value addition across the chain.

Key words: Carbon emissions ·value chain· stages· sugarcane farming· sugar mill· ethanol· molasses ·bagass

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Shivani Badola

Effectiveness of Mohalla Clinics in improving access to Primary Healthcare Services in Delhi

ABSTRACT:

Introduction: The dominance of private sector can be seen in National Capital of India, Delhi where about 80% of the outpatient services were delivered by the private healthcare sector during 2014-15. The dominance of private healthcare sector has led to increase the out-of-pocket(OOP)healthcare expenditure which makes the healthcare services inaccessible to the poor and middle income class. Hence, it is expected that free primary healthcare services delivered by the mohalla clinics will increase the “access” among the unserved and underserved section of the society. **Objectives:** The major objective of the study is to check the effectiveness of mohalla clinics based on the different dimensions of access i.e. availability, accessibility, accommodation, affordability and acceptability. This study also determines the factor associated with the utilisation of mohalla clinics vis-à-vis to public and private healthcare sources.

Methods: Creation of index value based on the satisfaction of the individuals with respect to 5 dimension of access. Multinomial Regression Model and Multiple Regression Model for analysis the factors associated with the utilisation of mohalla clinic and to determine the OOP health expenditure incur in mohalla clinic vis-à-vis to public or private sources respectively.

Results: People do believe that availability and accessibility of primary healthcare services have been improved after the implementation of mohalla clinics. However, there is bifurcation with respect to the area studied as, some of the indicators are not performing well in Mangolpuri area as compared to Peeragarhi area. Furthermore, mohalla clinics are found to be 100% affordable as people have to pay nothing out of their pocket and they were basically utilising mohalla clinic for communicable disease vis-à-vis to non-communicable disease. Also, the poorest and middle income group people are majorly utilising mohalla clinic as compared to richest income group.

Conclusion: The mohalla clinic is effective in delivering the primary healthcare services as we have seen in case of Peeragarhi area. However, they are not performing well in other parts of Delhi as we have seen in case of Mangolpuri area. Hence, Govt. should properly regulate, monitor and implement this policy of free healthcare services so that it functions uniformly across all the regions of Delhi.

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Shivi Takkar

Land Acquisition : How fair is the "Fair Compensation" ?

ABSTRACT:

In any society, land is a critical asset. Land is not only a source of livelihood and an important economic resource but is also central to its history, culture, pride and most importantly identity of a community. For a country like India, where land is a scarce resource, due to high economic growth rate and demand for infrastructural projects, land acquisition projects have increased in great number. Under Land Acquisition Act, 1894, it was observed that affected families were carrying the burden of development projects. However, Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 claims to provide fair compensation to the affected families. The objective of this thesis is to assess this claim of fair compensation in the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 in Jewar airport project, Uttar Pradesh. This thesis has incorporated case study approach. The assessment of fairness of compensation has been carried out from the perspective of state, affected families and the analyst. The results of the study show that though fair compensation has been provided according to the state however, according to both the affected families and the analyst, fair compensation has not been provided to the affected families of Jewar Airport.

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Shreya Bedia

Economics of Solar Powered Irrigation Pumps in Dhundhi: A study through the lens of Energy-Water nexus

ABSTRACT:

Agriculture though employs half of India's population; its GDP contribution is very low owing to the poor farm productivity. Persistent erratic rainfall with additive pressure of ever-increasing population has deepened the need of irrigation access. This has led to increased installation of pumps resulting in higher energy requirement, highlighting the "energy-water nexus". With the rising energy demand and scarce resources, policymakers sought to shift to alternate energy options. Solar powered irrigation systems (SPIP) as a solution serves the dual purpose of reliable irrigation source and contribution to country's green energy targets. While some studies stated that solar pumps would eliminate the energy-water trade-off, other researchers argued against it and termed SPIP as 'Frankenstein' monster with potential to over exploit ground water to save energy resource. With the large scale government policies encouraging SPIP, the study aims to assess its influence on farmers' livelihood as well as the scale of groundwater extraction in agricultural use in Dhundhi, where solar pumps are deployed with an energy buy-back option. The study found out that solar pump users are being positively benefitted with a substantial increase in income stemming from cost reductions and timely irrigation. Higher water sales further augmented the income of solar pump owners (SPO) creating a negative externality for diesel pump owners who lost their customers to SPOs as demonstrated in the qualitative analysis. Though the scale and rate of water abstraction has increased post solar pumps, the high physical and economic productivity of solar pump owners has evidenced the efficacy of the energy incentive in curbing over-abstraction of water. The issue lies with the solar water buyers who have resulted in lowest physical water productivity in response to the irrigation cost from solar pumps which is a fixed rate per land unit opposed to price per hour charged in case of diesel pumps.

Keywords: Solar powered irrigation pumps, Energy-water nexus, Groundwater

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Shreya Khurana

Market Response to Energy Efficient Household Refrigerators :The Indian Scenario

ABSTRACT:

The consumer durable goods market includes two types of products: energy efficient and energy inefficient ones. Such a differentiation in between product models is done on the basis of energy consumed by specific product models. Use of higher energy efficient household refrigerators offer savings on electricity bills to the consumers and also contributes positively towards environmental protection. This is the reason behind attempts to promote penetration and adoption of such products. However, the market for energy efficient refrigerators has not grown overtime in India, as was anticipated. The present study attempts to look at the decision patterns of the consumers and producers leading to such market scenario and investigate the reasons for the same. The results derived depict inexistence of any economic reason for the consumers to invest in a higher energy efficient refrigerator and that the producers are unable to reach the economies of scale of production because of which the price of such products is at a high level. The higher price also explains why these appliances are unattractive to the price conscious consumers. In such a situation, government intervention is required in order to achieve market transformation by increasing penetration of energy efficient household refrigerators.

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Shruti Goyal

Sustainability of Organic Farming –In context of Giridih, Jharkhand

ABSTRACT:

The sustenance of the livelihood of its 2/3rd population engaged in agriculture is imperative for any economy. This study defines sustenance of agriculture by its ability to create a surplus. As surplus is that part of output which is left after all inputs (labour and non-labour) are deducted from it. Emphasising the use of labour inputs in doing so, human labour hours are divided as on-farm work hours and off-farm work hours. The idea is that even off-farm hours of family members require energy that the farm has to produce. In the results, it is observed that such consumption is a source of unsustainability in the farms. Another reason for unsustainability is the small sizes (between 1 to 5 acres) of farms on which crops are sown. As a solution to the first problem, lower family labour and higher hired labour, for which energy has to be provided only for on-farm work hours. The second cause of sustainability requires that policy measures should be targeted towards the land market so that the problem of small farm sizes and also fragmented farm sizes can be solved. This is true for both organic as well as inorganic farms. The data also reveals that the probability of an inorganically producing household being sustainable is 87.5% as compared to 60% of its organic counterparts. Two reasons for the same were observed. Firstly, smaller number of household members and secondly, engagement of at least one member of the family in non-agricultural work.

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Shubham Aggarwal

Measuring Value of Statistical life of construction workers in Delhi

ABSTRACT:

According to ILO, CI is nine times riskier to that of manufacturing. This implies that construction workers have the risk of injury, illness or even death almost every time they are handling jobs of any construction trade. Therefore, policymakers need to design health and safety policies for the construction workers. Designing of these policies also require cost and benefit analysis. Hence, VSL estimates serve such purposes. However, despite of nine times riskier to that of manufacturing, this study has tried estimating VSL and VSI of construction workers in Delhi. Primary survey of 284 construction workers working across Delhi has been carried out in the study. Using revealed preference approach, calculation of VSL and VSI has been done. Since the study relies wholly on primary survey, so there is a major limitation of the study that it is unable to calculate VSL with respect to fatality rates. However, as a morbidity variable, the study incorporated a variable, perceived risk of death in the study. However, its statistical insignificance did not allow the study to calculate VSL. Besides, the study succeeded in calculating VSI of construction workers in Delhi which is INR 3.9 million. Apart from this, study also found that workers who perceive injury risk tend to get positive wage compensation in Delhi.

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Sumedha

Economic Feasibility Of Marketing Cooking Fuel Obtained From Sewage

ABSTRACT:

Untreated sewage is a huge menace all over Delhi causing both health and non-health problems to households. One of the reasons is insufficient STPs in certain areas or because of lack of funds to maintain full capacity operation of existing STPs. With growing awareness that methane produced in STP can be used as a bio fuel using bio methanation techniques, several STPs has been upgraded to produce electricity from bio methane generated, to use in functioning of plant itself. But the problem of insufficient fund continues as a result of which even after getting upgraded many STPs still run under capacity. The given study talks about marketing biomethane generated in STPs as a cooking fuel so that additional revenue obtained can if not completely, at least partially fund the operational and maintenance cost.

Objective: To determine opportunities (potential benefits) and threats that can hinder higher level penetration of biofuel generated in sewage treatment, to decide whether such fuel should be marketed or not.

Research question: Whether inexhaustible cooking fuel generated from STPs with bio methanation is socially acceptable/adoptable by households and can be marketed as an alternative cooking fuel and what factors will affect household's willingness to pay?

Methodology: Mixed method has been applied to the current study. SWOT analysis is used to ascertain marketability of CBM gas and within SWOT, ranking based conjoint analysis is used to determine household's average WTP and cost estimates are obtained and compared with average WTP to check economic viability of the project. Apart from this, regression analysis is used to determine factors affecting WTP.

Finding: It is economically viable to market bio-fuel obtained in STPs for cooking purposes as expected revenue is sufficient to cover the additional variable cost incurred annually on marketing such fuel. **Limitation:** The scope of the study is limited to determining marketability of the bio-fuel generated in STP for cooking purpose. However, this fuel can also be marketed as transportation fuel and electricity.

Significance: This study gives a glimpse to government how successful marketing of bio fuel generated in STP will be as cooking fuel and encourages further study to check marketability of this biofuel as other fuels and evaluate marketing of this biofuel in what form is more profitable.

Keywords: STP, cooking fuel, SWOT analysis, WTP, ranking based conjoint analysis, choice sets, economic feasibility.

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Vaibhav Sohla

Rooftop Rainwater Harvesting as an Intervention for Water Scarcity: The Case of Dehradun

ABSTRACT:

Water scarcity is an issue that needs urgent attention especially in developing and under-developed countries. Various global studies have documented the issue of water scarcity and poor water quality. Indian states like Himachal Pradesh and Uttarakhand, have been facing water scarcity as of late. There are also issues of poor water quality leading to health impacts on the local communities. The current study addresses the issue through the adoption of Rooftop Rainwater Harvesting (RRWH). Dehradun in the state of Uttarakhand has been chosen as the study site. The paper examines the willingness to pay (WTP) of local residents towards a participatory RRWH system using a Contingent Valuation Method (CVM). A payment card method of WTP elicitation has been selected where the payment vehicle has been chosen as surcharge in the water bill. A binary Logit model has been applied to study the impact of socio-economic characteristics, housing characteristics and water scarcity on the probability of people being willing to pay towards the proposed participatory system. A purposive sample of 104 respondents has been selected in the context of the study. All the socio-economic characteristics, housing characteristics etc. have been recorded. Further a collective action framework has been proposed for the Community-based RRWH (CB-RRWH) system. The study finds that people in the study area are receptive towards the idea of RRWH but more efforts need to be put by the state government to make people aware of RRWH.

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