Development Alternatives
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CATALOGUE OF PUBLICATIONS

Watershed

Note

Please note that these papers are generally reports of work done on projects the primary purpose of which was to deliver results on the ground and under stringent reporting deadlines.

Although every effort is made by Development Alternatives staff to ensure the accuracy and rigour of their analysis and recommendations, they were intended to be distributed rapidly and while they have received careful editing, many of them have not been formally peer-reviewed to the standards required for academic research.

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Development Alternatives and TARA

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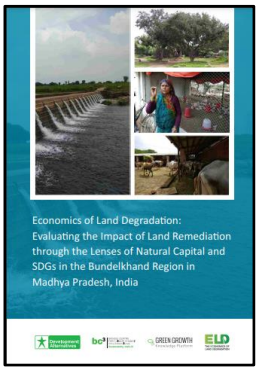
Watershed

Publications



Title: Economics of Land Degradation: Evaluating the Impact of Land Remediation through the Lenses of Natural Capital and SDGs in the Bundelkhand Region in Madhya Pradesh, India

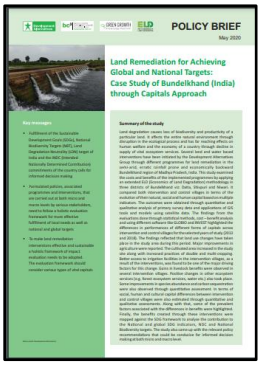
Year of Publication: 2020

Pages: 111

Keywords: Watershed, Agriculture, Livelihood

Abstract: This report encapsulates the costs and benefits of the programmes implemented by Development Alternatives by applying the ELD methodology in three districts of Bundelkhand. The assessments looked into natural, social and human capital based on multiple indicators. The report highlights the differences in performances of different forms of capitals across intervention and control villages for the selected period (2013- 2018). The findings reflected that land-use changes have taken place in the study area during this period. Major improvements in agriculture were reported.

URL: https://bit.ly/3lPjKGG



Title: Land Remediation for Achieving

Year of Publication: 2020

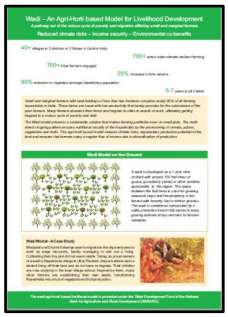
Pages: 16

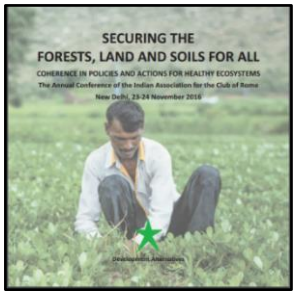
Keywords: Watershed, Agriculture, Livelihood

Abstract: Development Alternatives has initiated several interventions for land remediation in the semi-arid, erratic rainfall prone and economically backward Bundelkhand region in Madhya Pradesh. This report encapsulates the costs and benefits of the implemented programmes by applying an extended Economics of Land Degradation methodology in three districts of – Datia, Shivpuri and Niwari, of the region. The findings reflect the land-use changes in the districts. Major improvements in agriculture were reported.

URL: https://bit.ly/38PKII2

	**Title:** Bundelkhand: From Water Stressed to Water Secure..through integrated water management **Year of Publication:** 2020 **Pages:** 2 **Keywords:** Watershed, Agriculture, Livelihood **Abstract:** This Factsheet analyses the mismanagement of water and highlights the challenges and opportunities for creating solutions for the grave water woes in Bundelkhand. It also focuses on Development Alternatives' unique approach for water management, which is sustainable and inclusive - ensuring 'water for all, and always'. **URL:** https://bit.ly/3EFZcJn
	**Title:** ShubhKal building resilience for a brighter tomorrow **Year of Publication:** 2019 **Pages:** 52 **Keywords:** Watershed,Resilience, Agriculture, Livelihood **Abstract:** This book is an ode to the indomitable spirit of the people of Bundelkhand. The vignettes in it offer but a glimmer of the transformations that are possible. We have developed an array of eco-solutions and systems to address the issues. But, the sheer scale and complexity of the challenge in Bundelkhand demands that the ideas, energies and efforts of all actors are in synergy to realise a shared vision of a resilient future for Bundelkhand. The time for action is now, and if we all come together, ShubhKal – a better tomorrow – will be ours. **URL:** https://bit.ly/3lWPedN
	**Title:** Integrated Watershed Management for Water, Food and Livelihood Security in Rural India **Year of Publication:** 2016 **Pages:** 2 **Keywords:** Watershed, Livelihood **Abstract:** This Capitalisation Document gives a snapshot of implementing the Integrated Watershed Management Model at the grassroots. **URL:** https://bit.ly/2YuN6QI

	**Title:** Wadi – An Agri-Horti Based Model for Livelihood Development: Capitalisation Document **Year of Publication:** 2016 **Pages:** 2 **Keywords:** Livelihood, Agriculture **Abstract:** This Capitalisation Document gives a snapshot of the Wadi model, including the design, economics and co-benefits to the environment. **URL:** https://bit.ly/3DEZ24j
	**Title:** Wadi - An Agro-Forestry Based Livelihood Development Model: Capitalisation Document **Year of Publication:** 2016 **Pages:** 2 **Keywords:** Watershed, Livelihood **Abstract:** This Capitalisation Document gives a snapshot of implementing the Integrated Watershed Management Model at the grassroots. **URL:** https://bit.ly/3ByLCF5
	**Title:** Building Resilience in Agriculture for Food Security **Year of Publication:** 2016 **Pages:** 46 **Keywords:** Agriculture, Livelihood, Food Security **Abstract:** This document is an outcome of a project titled 'Building Resilience in Agriculture for Food Security, funded by Heinrich Boll Foundation, for the economic development, social empowerment and environment management of our society. **URL:** https://bit.ly/3jzYGDY



Title: Securing the Forests, Land and Soils for all

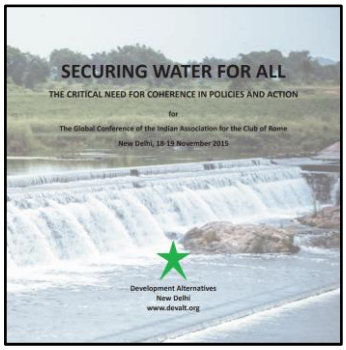
Year of Publication: 2016

Pages: 36

Keywords: Livelihood, Agriculture, Natural Resource

Abstract: Life on Earth depends on many resources and a vast number of interactions and flows among them. Critical among these are oxygen, carbon and nitrogen from the atmosphere, light and heat from the sun, food from terrestrial and ocean biomes, not to mention myriads of complex physical, chemical and biological cycles and geological processes. In this annual conference of CoR-India, DA attempts to explore the technological, economic and policy choices we can make that converge with goals of sustainability.

URL: https://bit.ly/3oeD0QP



Title: Securing Water for All

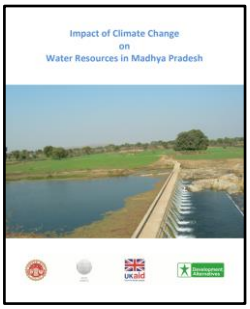
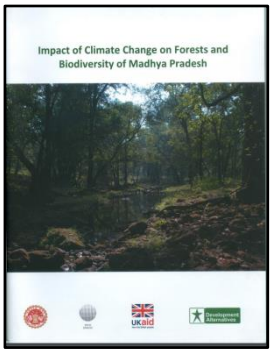
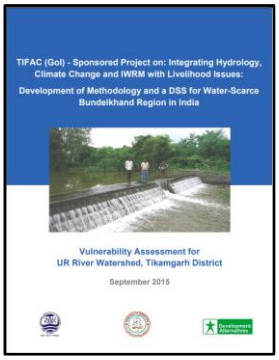
Year of Publication: 2015

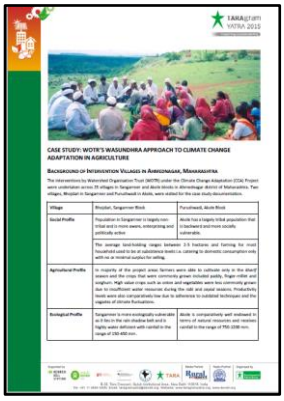
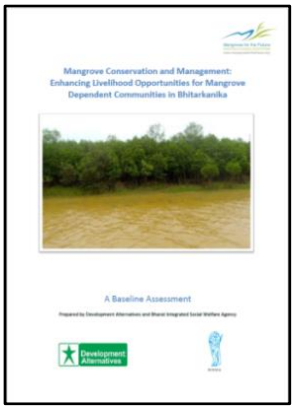
Pages: 28

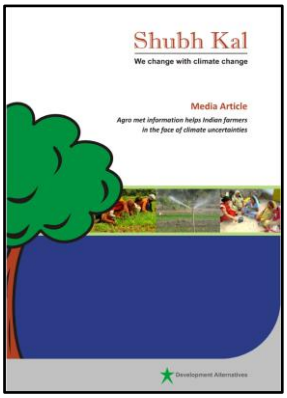
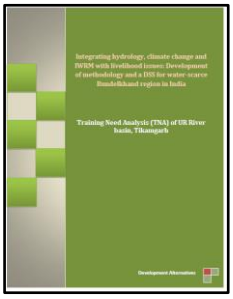
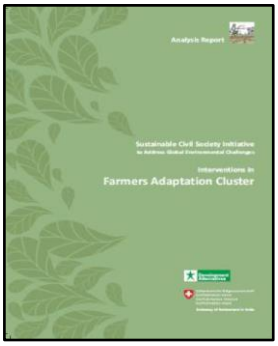
Keywords: Livelihood, Agriculture, Natural Resource

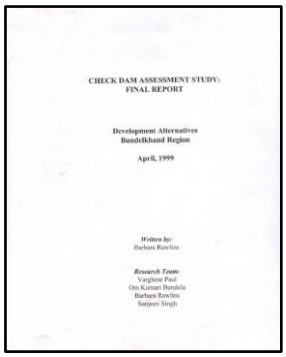
Abstract: Water is a fundamental human need and a critical national asset. India's huge and growing population is putting a severe strain on its water resources. Water, along with food, energy and land, forms a critical part of the 'new security agenda'. 'Policy Coherence Analysis' attempts to integrate the economic, social, environmental and governance dimensions of sustainable development at all stages of domestic and international policy. This booklet explores the nature of the institutions of the State, of business and of civil society that is necessary - even if not entirely sufficient - to serve the economic, ecological and societal, and above all ethical, purpose of speedily eliminating water insecurity from India.

URL: https://bit.ly/3nXC2Ir

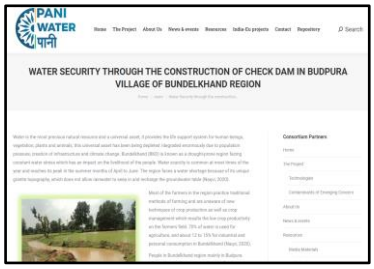
	**Title:** Impact of Climate Change on Water Resources in Madhya Pradesh **Year of Publication:** 2015 **Pages:** 40 **Keywords**: Biodiversity, Climate Change, Water Resources **Abstract:** This report highlights the impact of climate change on water resources in Madhya Pradesh. **URL:** https://bit.ly/3kAV2Ks
	**Title:** Impact of Climate Change on Forests and Biodiversity in Madhya Pradesh **Year of Publication:** 2015 **Pages:** 44 **Keywords**: Biodiversity, Climate Change **Abstract:** This report is a part of the DFID project 'Strengthening Performance Management in Government' (SPMG). It highlights the impact of climate change on forests and biodiversity in Madhya Pradesh. **URL:** http://devalt.org/images/L2_ProjectPdfs/(15)ForestsDiversity.pdf?Oid=150
	**Title:** Vulnerability Assessment for UR River Watershed, Tikamgarh District **Year of Publication:** 2015 **Pages:** 40 **Keywords:** Climate Change, Agriculture, Watershed **Abstract:** Totodrought-prone assess the livelihood related vulnerabilities and derive the strategies and solutions for mitigating the impacts of climate change, a vulnerability assessment was conducted in the proposed Watershed area (Ur River Watershed). This area falls in the Tikamgarh district of the Bundelkhand region. **URL:** https://bit.ly/2WKk3JQ

	**Title:** WOTR'S Wasundhra Approach To Climate Change adaptation In Agriculture **Year of Publication:** 2015 **Pages:** 6 **Keywords:** Climate Change, Agriculture **Abstract:** This case study focuses on how the problems in the agricultural community such as lack of water, irregular patterns of weather and lack of livelihood security were overcome by the interventions by Watershed Organisation Trust (WOTR). This initiative was started under the Climate Change Adaptation (CCA) Project across 25 villages in the Sangamner and Akole blocks in the Ahmednagar district of Maharashtra. The success of the approach demonstrates the importance of putting the community at the centre of development while investing in their capacity building to drive sustainable and equitable development.
	**Title:** Mangrove Conservation and Management: Enhancing Livelihood Opportunities for Mangrove Dependent Communities in Bhitarkanika **Year of** Publication: 2013 **Pages:** 17 **Keywords:** Climate Change, Livelihood, Forest **Abstract**: This baseline assessment is based on two villages of the Bhitarkanika Wildlife Sanctuary and includes information on the socio-economic status of the respondents, assessment of natural resources and livelihoods in the area and information on climate change and vulnerability in the area. **URL:** https://bit.ly/2JR8Zl7
	**Title:** Watershed management sees farmers through drought in the semi-arid plains of India **Year of Publication:** 2013 **Pages:** 5 **Keywords:** Agriculture, FPO **Abstract:** For Ram Singh from Chopra village in Bundelkhand, water means money. However, Mr Singh is not selling mineral water. He is simply a farmer trying to survive in this drought-prone area where over 70% of the population relies on rain-fed agriculture. For these communities, a deficient monsoon can have disastrous effects - destroying crops, leaving families without food and forcing people to migrate to cities in search of work.

	**Title:** Agro met information helps Indian farmers in the face of climate uncertainties **Year of Publication:** 2013 **Pages:** 5 **Keywords:** Agriculture, FPO **Abstract:** For generations, Indian farmers have used traditional knowledge like assessing plant, animal and insect behaviour to understand weather patterns in order to make decisions about cropping and irrigation cycles. However, in recent years, farmers have been seeking scientific weather forecasts as opposed to just relying on traditional weather predictions to deal with increasing climate uncertainties.
	**Title:** Training Need Analysis (TNA) of UR River basin, Tikamgarh **Year of Publication:** 2013 **Pages:** 16 **Keywords:** Livelihood, Climate, Water, Resource, Management **Abstract:** This study was conducted to identify the Vikas Mitras and training needs of Vikas Mitras in the field of IWM, agriculture and allied areas. Ten Vikas mitras from the two block viz. Tikamgarh and Baldevgarh were selected using the disproportionate stratified random sampling method and were personally interviewed on a three-point continuum as most needed, needed and least needed.
	**Title:** Resource Vulnerability of Semi-Arid Bundelkhand and Recommendations for Policy Response- a brief analysis **Year of Publication:** 2011 **Pages:** 38 **Keywords:** Livelihood, Habitat, Water, Management **Abstract:** The present paper attempts to highlight key issues and challenges relating to climate change adaptation in arid and semi-arid regions. It discusses processes that can result in sustainable use of water resources especially in relation to food security in the semi-arid region of Bundelkhand. **URL:** https://www.devalt.org/images/L2_ProjectPdfs/SustainableCivil.pdf

	**Title:** Application of Remote sensing and Geographic Information System (GIS) in Watershed management **Year of Publication:** 2003 **Pages:** 16 **Keywords:** Agriculture, FPO **Abstract:** This paper seeks to demonstrate the usefulness of GIS technology in conjunction with Remote Sensing in watershed management. The watershed approach is more national because the resources of land and water have optimum interaction and system effect when developed on a watershed basis all over India.
	**Title:** Check Dam Assessment Study **Year of Publication:** 1999 **Pages:** 98 **Keywords:** Agriculture, FPO **Abstract:** The purpose of the study was not only to determine the actual benefits that accrued to project-affected people and gather feedback on the appropriateness of the check dams as an intervention but also to design and field test an evaluation methodology that could be adapted and applied DA's others sustainable livelihood projects. The study also gathered information on community problems, maternal and child health matters etc.
	**Title:** Impact of Air pollution on Agriculture in India **Year of Publication:** 1997 **Pages:** 44 **Keywords:** Agriculture, Air, Pollution, Crops **Abstract:** This case study focuses on collating the agriculture data for the subsistence crops, cash crops, export and commercial crops and horticulture crops of the following states: Punjab, Haryana, Uttar Pradesh, Maharashtra and Gujarat.

External Publications



Title: Water Security Through the Construction of Check Dam in Budpura Village of Bundelkhand Region

Author: Sanyukta Kumari

Published by: PANI WATER

Year of Publication: 2020

Keywords: Water, Resource, Livelihood, Community

Abstract: Development Alternatives in support of NABARD has initiated the project on Watershed development for livelihood security in the Pura and Budpura villages of Jhansi District to promote sustainable watershed management for ensuring the protection and enhancement of the natural resource base. The initiative is designed to enhance water security by utilizing the opportunities offered by the topography and hydro-geological regime and thereby promoting sustainable livelihoods, guided by the needs of the communities.

URL: https://bit.ly/2XCEI8C

Title: Community-led Resource Efficient Agriculture in Bundelkhand

Author: Mayukh Hajra

Published by: CIPT Compendium - Best Practices on Water and Agricultural Sustainability

Year of Publication: 2017

Pages: 43-44

Keywords: Resource, Community, Agriculture, Water

Abstract: This case study highlights community-led resource-efficient agriculture initiatives undertaken by Development Alternatives in Bundelkhand. This is one of the 32 success stories from 19 states involving local NGOs, universities, corporate foundations, donor agencies and research organisations.

URL: https://bit.ly/3t6u1kZ

Title: Sustaining Farm Productivity through Watershed based Participatory Balance Nutrient Management: A Case Study from Semi-Arid Tropics of Central India

Author: D.R. Palsaniya, Ramesh Singh, R.K. Tewari, S.K. Dhyani , R.S. Yadav , S.P. Wani , R. Sachan, S.N. Pandey

Published by: Indian Journal of Soil Conservation

Year of Publication: 2016


Sustaining farm productivity through watershed based participatory balance nutrient management: A case study from Semi-Arid Tropics of central India

Pages: 13-18

Keywords: Water, Farm, Farmer

Abstract: This paper is based on action research conducted at Domagor-Pahuj watershed located in Babina block of Jhansi, where DA, with scientific support from NRCAF, is developing a model watershed under the aegis of ICRISAT.

URL: https://bit.ly/2XMjHn4

Title: Rain Water Harvesting Through Farm, Pond and Well Recharging Structures to Support Rainfed Agriculture

Author: Sandeep Khanwalkar

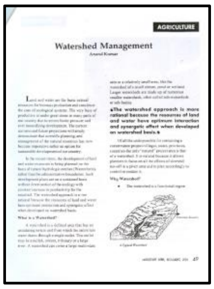
Published by: MP Rural Livelihoods

Year of Publication: 2012

Keywords: Water, Farm, Economy

Abstract: Gram Sabha central to village development - planning, implementation & monitoring Micro planning by the village level institutions and associated common interest groups Poverty targeting through well being ranking by the gram sabha, direct transfer of untied grant to the village assembly, project team in the role of a facilitator Focus on capacity building of primary stakeholders, developing new & expanding existing opportunities for alternative / supplementary livelihoods by identifying gaps in existing resource & socio economic situation and convergence with other programmes are the main objectives of this project.

URL: https://bit.ly/3o8jpSe


AGRICULTURE

Watershed Management

Anand Kumar

Title: Watershed Management

Author: Anand Kumar

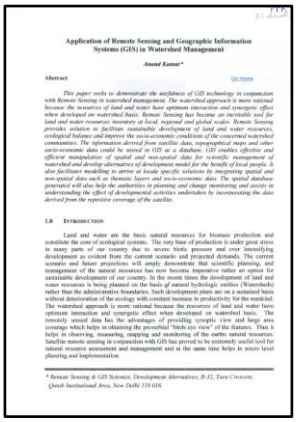
Published by: Productivity News

Year of Publication: 2003

Pages: 49-52

Keywords: Resources, Land, Water

Abstract: This article focuses on land and water are the basic natural resources for biomass production and constitute the core of the ecological system. The very base of production is under great stress in many parts of our country due to service biotic pressure and ever-intensifying development.



Application of Remote Sensing and Geographic Information Systems (GIS) in Watershed Management

Anand Kumar*

Abstract

This paper seeks to demonstrate the usefulness of GIS technology in conjunction with Remote Sensing in watershed management. The watershed approach is more national because the resources of land and water have optimum interaction and synergetic effect when developed on watershed basis. Remote Sensing has become an inevitable tool for land and water resources inventory at local, regional and global scales. Remote Sensing provides solution to facilitate sustainable development of land and water resources, ecological balance and improve the socio-economic conditions of the concerned watershed communities. The information derived from satellite data, topographical maps and other socio-economic data could be stored in GIS as a database. GIS enables effective and efficient manipulation of spatial and non-spatial data for scientific management of watershed and develop alternatives of development model for the benefit of local people. It also facilitates modelling to arrive at locale specific solutions by integrating spatial and non-spatial data such as thematic layers and socio-economic data. The spatial database generated will also help the authorities in planning and change monitoring and assists in understanding the effect of developmental activities undertaken by incorporating the data derived from the repetitive coverage of the satellite.

1.0 INTRODUCTION

Land and water are the basic natural resources for biomass production and constitute the core of ecological systems. The very base of production is under great stress in many parts of our country due to severe biotic pressure and ever intensifying development as evident from the current scenario and projected demands. The current scenario and future projections will amply demonstrate that scientific planning, and management of the natural resources has now become imperative rather an option for sustainable development of our country. In the recent times the development of land and water resources is being planned on the basis of natural hydrologic entities (Watersheds) rather than the administrative boundaries. Such development plans are on a sustained basis without deterioration of the ecology with constant increase in productivity for the mankind. The watershed approach is more rational because the resources of land and water have optimum interaction and synergetic effect when developed on watershed basis. The remotely sensed data has the advantages of providing synoptic view and large area coverage which helps in obtaining the proverbial "birds eye view" of the features. Thus it helps in observing, measuring, mapping and monitoring of the earths natural resources. Satellite remote sensing in conjunction with GIS has proved to be extremely useful tool for natural resource assessment and management and at the same time helps in micro level planning and implementation.

* Remote Sensing & GIS Scientist, Development Alternatives, B-32, Tara Crescent, Qutab Institutional Area, New Delhi 110 016.

Title: Application of Remote sensing and Geographic Information System (GIS) in Watershed management

Author: Anand Kumar

Year of Publication: 2003

Pages: 16

Keywords: Agriculture, FPO

Abstract: This paper seeks to demonstrate the usefulness of GIS technology in conjunction with Remote Sensing in watershed management. The watershed approach is more national because the resources of land and water have optimum interaction and system effect when developed on a watershed basis all over India.

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Agricultural Water Management

Volume 18, Issue 4, November 1989, Pages 279-291

ELSEVIER

Minimal irrigation on small agricultural watersheds with red soils in the semi-arid tropics of Andhra Pradesh, India

K. Vijayalakshmi *, K.P.R. Vittal, U.M.B. Rao

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https://doi.org/10.1016/0378-3774(89)90026-7 Get rights and content

Abstract

Part of the runoff water from sloping red soils of the Andhra Pradesh region was stored and used for local irrigation of several crops over several years, during which rainfall varied widely in the cropping period. This type of utilisation of harvested water is unique in the semi-arid tropics. Judicious application of small amounts of water through alternate central furrows to wet the root zone during a stress period increased yields significantly. Response to irrigation decreased with increasing soil moisture in the root zone. Irrigation was beneficial in both sub-normal and normal rainfall conditions during the cropping period. With above normal rainfall there was hardly any need for irrigation. According to rainfall probability, expected yield increases of sorghum and castorbean over time were on average 251 and 523 kg/ha with irrigation of only 15 and 50 mm, respectively.

Title: Minimal irrigation on small agricultural watersheds with red soils in the semi-arid tropics of Andhra Pradesh, India

Author: K. Vijayalakshmi, K. P. R. Vittal and U. M. B. Rao

Published by: Science Direct

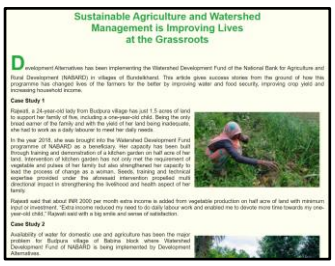
Year of Publication: 1989

Keywords: Soil, Irrigation, Moisture, Water

Abstract: Part of the runoff water from sloping red soils of the Andhra Pradesh region was stored and used for local irrigation of several crops over several years, during which rainfall varied widely in the cropping period. This type of utilisation of harvested water is unique in the semi-arid tropics. Judicious application of small amounts of water through alternate central furrows to wet the root zone during a stress period increased yields significantly. Response to irrigation decreased with increasing soil moisture in the root zone. Irrigation was beneficial in both sub-normal and normal rainfall conditions during the cropping period.

URL: https://bit.ly/3ESYJUc

DA Newsletters



Sustainable Agriculture and Watershed Management is Improving Lives at the Grassroots

Development Alternatives has been implementing the Watershed Development Fund of the National Bank for Agriculture and Rural Development (NABARD) in villages of Bundelkhand. This article gives success stories from the ground of how this programme has changed lives of the farmers for the better by improving water and food security, improving crop yield and increasing household income.

Case Study 1

Rajwati, a 24-year-old lady from Budpura village has just 1.5 acres of land to support her family of five, including a one-year-old child. Being the only bread earner of the family and with the yield of her land being inadequate, she had to work as a daily labourer to meet her daily needs.

In the year 2018, she was brought into the Watershed Development Fund programme of NABARD as a beneficiary. Her capacity has been built through training and demonstration of a kitchen garden on half acre of her land. Intervention of kitchen garden has not only met the requirement of vegetable and pulses of her family but also strengthened her capacity to lead the process of change as a woman. Seeds, training and technical expertise provided under the aforesaid intervention propelled multi directional impact in strengthening the livelihood and health aspect of her family.

Rajwati said that about INR 2000 per month extra income is added from vegetable production on half acre of land with minimum input or investment. "Extra income reduced my need to do daily labour work and enabled me to devote more time towards my one-year-old child," Rajwati said with a big smile and sense of satisfaction.

Case Study 2

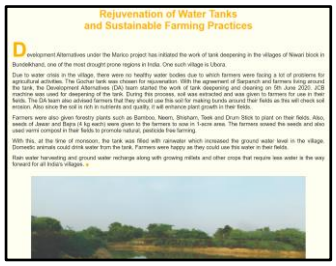
Availability of water for domestic use and agriculture has been the major problem for Budpura village of Babina block where Watershed Development Fund of NABARD is being implemented by Development Alternatives

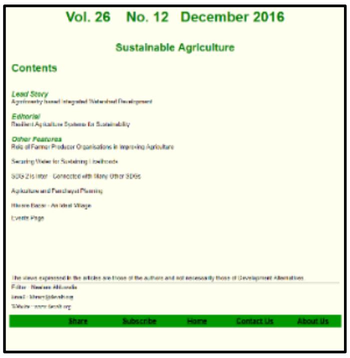
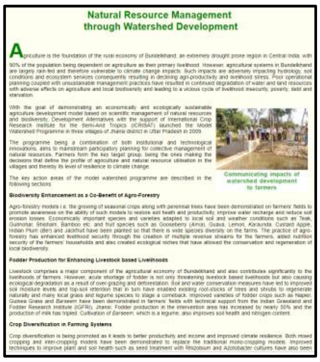
Title: Sustainable Agriculture and Watershed Management is Improving Lives at the Grassroots

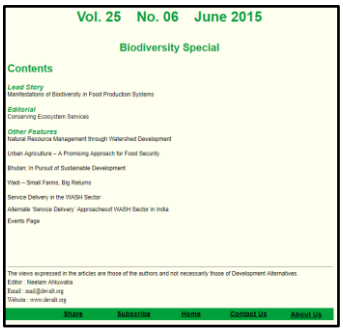
Author: Rishabh Singh

Year of Publication: 2020

Keywords: Water, Agriculture, Rural, Development

	Abstract: Development Alternatives has been implementing the Watershed Development Fund of the National Bank for Agriculture and Rural Development (NABARD) in villages of Bundelkhand. This article gives success stories from the ground of how this programme has changed the lives of the farmers for the better by improving water and food security, improving crop yield and increasing household income. **URL:** https://www.devalt.org/newsletter/dec20/of_2.htm
 Rejuvenation of Water Tanks and Sustainable Farming Practices	**Title**: Rejuvenation of Water Tanks and Sustainable Farming Practices **Author:** Lalit Kumar Gangwar **Year of Publication**: 2020 **Keywords**: Water, Farmer, Rejuvenation, Agriculture, Tank **Abstract**: Due to the water crisis in the village, there were no healthy water bodies due to which farmers were facing a lot of problems for agricultural activities. The Gochar tank was chosen for rejuvenation. With the agreement of the Sarpanch and farmers living around the tank, the Development Alternatives (DA) team started the work of tank deepening and cleaning on 5th June 2020. JCB machine was used for deepening of the tank. During this process, the soil was extracted and was given to farmers for use in their fields. **URL:** https://www.devalt.org/newsletter/oct20/of_4.htm
 Watershed Management through Community Participation	**Title**: Watershed Management through Community Participation **Authors:** Amarnath Singh **Year of Publication:** 2020 **Keywords**: Water, Community, Rain, Drought **Abstract:** Agriculture is the main source of livelihood for the people of the Pura and Budpura villages of the Bundelkhand region. Climate change negatively impacted these villages that lie in the Babina block in Jhansi district, Uttar Pradesh. The decline in rainfall and lack of water conservation strategies and initiatives steered up the drought kind of situation in these villages. **URL:** https://www.devalt.org/newsletter/feb20/of_6.htm

 Communication Facilitating Natural Resource Conservation	**Title**: Communication Facilitating Natural Resource Conservation **Authors:** Rishabh Singh **Year of Publication:** 2019 **Keywords**: Water, Conservation, Land, Vegetation **Abstract:** Watershed is a geo-hydrological unit draining to a common point by a system of drains. Watershed development refers to the conservation, regeneration and judicious use of all the natural resources particularly land, water, vegetation, animals and human development within the watershed area. **URL:** https://www.devalt.org/newsletter/dec19/of_2.htm
 Vol. 26 No. 12 December 2016 Sustainable Agriculture Contents	**Title**: Sustainable Agriculture **Authors:** Dr. S.K. Dhyani, Gunjesh Kumar Gunjan, Mayukh Hajra, Medha, Bruno DORIN, Satabdi Mohapatra **Year of Publication:** 2016 **Keywords**: Climate, Technology, Water, Agroforestry **Abstract:** This newsletter focuses on climate change as a major challenge facing agriculture and how alternate solutions can be formed by combining innovations, technology and the community. This newsletter focuses on Agroforestry based Integrated Watershed Development which has multiple benefits such as enhanced crop intensification, yield enhancement, enhanced groundwater, reduced siltation, increased economic water productivity, ecosystem services and assured income and livelihoods. **URL:** http://www.devalt.org/newsletter/dec16/dec16.htm
 Natural Resource Management through Watershed Development	**Title:** Natural Resource Management through Watershed Development **Authors**: Dr Krishna Murari and Mohua Tripathy **Year of Publication:** 2015 **Keywords**: Resource, Water, Agriculture **Abstract:** The Model Watershed Programme has emerged as a site of learning for integrated watershed management and sustainable agri-production systems in Bundelkhand. It presents a strong case for replication across the region through the concerted efforts of stakeholders and actors engaged in processes of local development **URL:** https://www.devalt.org/newsletter/Jun15/of_1.htm



Title: Biodiversity Special

Authors: Mayukh Hajra, Kavneet Kaur, Parul Bansal, Dr Krishna Murari Krishna Ghalley, Chitrangna Dewan and Mohua Tripathy,

Year of Publication: 2015

Keywords: Biodiversity, Food, Cultivation, Rain, Water

Abstract: In India, agricultural policies targeted at achieving food security outcomes have narrowly focused on increasing the production of wheat and rice leading to a decline in the cultivation of grains such as millets and consequently their representation in our diets. This has led to the loss of crop diversity and negative consequences on the nutrition security of people living in rain-fed areas. This newsletter focuses on alternatives such as agroforestry and agri-horticulture, WADI projects, urban agriculture etc.

URL: https://www.devalt.org/newsletter/Jun15/Jun15.htm

Title: Natural Resources Management and Institutions

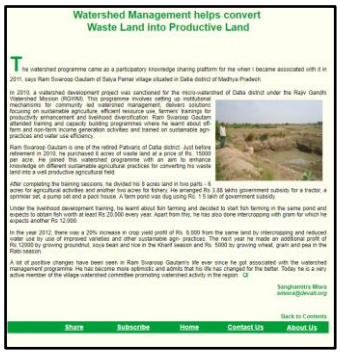
Authors: Shiv Bhushan Pandey, Mayukh Hajra, Mohua Tripathy, Chandan Mishra, Kavneet Kaur, Rakesh Singh, S.B. Pandey, Mayukh Hajra

Year of Publication: 2014

Keywords: Carbon, Water, Agriculture, Climate

Abstract: The agriculture sector currently accounts for about 17% of the carbon footprint of India and the promotion of agri-Horti and agroforestry based models such as the *wadi* can go a long way in reducing the carbon intensity of the sector. Conventional agriculture has been witnessing depleting productivity levels as a result of a combination of factors that include the adoption of unsustainable land, water and nutrient management practices, diminishing farm sizes and farm investment and increasing climate change impacts.

URL: https://www.devalt.org/newsletter/jul14/jul14.htm


Watershed Management helps convert
Waste Land into Productive Land

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Title: Watershed Management helps convert Waste Land into Productive Land

Author: Sanghamitra Misra

Year of Publication: 2014

Keywords: Water, Farmer, Agriculture

Abstract: In 2010, a watershed development project was sanctioned for the micro-watershed of Datia district under the Rajiv Gandhi Watershed Mission (RGWM). This programme involves setting up institutional mechanisms for community-led watershed management, delivers solutions focusing on sustainable agriculture, efficient resource use, farmers' training for productivity enhancement and livelihood diversification

URL: https://www.devalt.org/newsletter/nov14/of_5.htm


Enriching Biodiversity through
Watershed Management

Title: Enriching Biodiversity through Watershed Management

Author: Dr Krishna Murari

Magazine: Development Alternatives

Year of Publication: 2014

Keywords: Soil, Water, Farming, Agriculture

Abstract: Over the last 30 years, Development Alternatives has rejuvenated more than 25,000 hectares of land in Bundelkhand through its integrated soil and water conservation programmes. Construction of more than 150 water harvesting structures such as farm ponds, stop dams, gabion dams, check dams and loose boulders hae helped increase groundwater levels in this drought-prone region and has impacted growth in agriculture.

URL: https://www.devalt.org/newsletter/apr14/of_2.htm


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Sustainable Agriculture

Contents

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Title: Sustainable Agriculture

Authors: Dr Krishna Murari, Prince Vishal Swadeshi, Shiv Bhushan Pandey, Mayukh Hajra, Mahua Tripathy, Saumya Kumar

Year of Publication: 2013

Keywords: Sustainable, Agriculture

Abstract: In a situation of growing water scarcity and rising demands for non-agricultural uses of water, reassessment of sectoral allocations of water becomes inevitable. Water scarcity which already affects one in three persons on earth is set to increase in magnitude and scope as the global population grows and the increasing affluence drives up water demand. The newsletter also focuses on watershed technologies and the use of bioresources.

URL: https://www.devalt.org/newsletter/dec13/dec13.htm

Title: Participatory Planning and Sustainable Development: Role of the Watershed Committees

Authors: Dr Krishna Murari

Year of Publication: 2013

Keywords: Sustainable, Agriculture

Abstract: Over much of India's history, water has been managed very successfully as a local resource. Unfortunately, the logic of the so-called 'economies of scale' has led to a quest for larger projects and more centralised management systems resulting in many cases in an inequitable distribution of the resource. On the other hand, Watershed Committees created by villagers have succeeded to a great extent in ensuring the sustainability of the participatory programmes.

URL: https://www.devalt.org/newsletter/may13/of_2.htm

Title: Community Watershed Development: Rehabilitating Degraded Lands and Creating Sustainable Employment

Author: Dr Krishna Murari

Year of Publication: 2012

Keywords: Water, Rural, Livelihood, Farming

Abstract: The watershed development project possesses the potential to improve rural livelihoods through participatory efforts with a focus on integrated farming systems for enhancing income, productivity and livelihood security sustainably based on This article describes the model in detail, highlighting its working and beneficiaries.

URL: http://www.devalt.org/newsletter/dec12/of_5.htm

Title: Application of Geoinformation Technologies for Integrated Watershed Management

Author: Anand Kumar

Year of Publication: 2012

Keywords: Water, Geoinformation, Resource

Abstract: The development of land and water resources within a watershed is best handled by state-of-art tools, remote sensing and GIS. There is a need for correlating resource inventories with information regarding farmers' socio-economic conditions within a watershed area

URL: https://www.devalt.org/newsletter/feb12/lead.htm

Title Water, Drought and Livelihoods in Bundelkhand

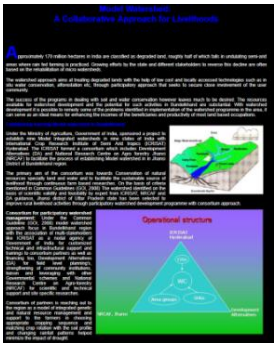
Author: Dr Shailendra Nath Pandey, Dr Naresh Sharma, Sonal Kulshreshtha, Dr Naresh Sharma, Aurobindo Mahato, Garima Chaturvedi, Arobindo Mahato, Garima Chaturvedi

Year of Publication: 2011

Keywords: Resource, Water, Community

Abstract: This newsletter comprises various articles on the Bundelkhand region of India - its degrading natural resource base, low per capita income, increasing human pressures and extreme weather conditions of drought. It highlights various interventions of Development Alternatives to manage resources, protect the vulnerability of communities and climate and enhance their livelihoods. Some of these are watershed development model, deep irrigation technology, farmers' adaptation cluster, resource-efficient farming equipment, WADI model and oil expelling unit.

URL: http://www.devalt.org/newsletter/jan11/jan11.htm



Title: Model Watershed: A Collaborative Approach for Livelihoods

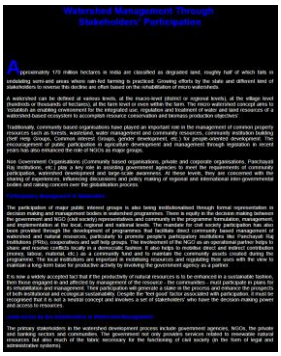
Author: S N Pandey and Naresh Sharma

Year of Publication: 2010

Keywords: Water, Livelihood, Community

Abstract: This article discusses how the watershed approach has manifold benefits - reversing the extensive degradation of land, conserving natural resources, strengthening community and facilitating a sustainable source of enhanced livelihoods. It describes the processes of implementation, operation, monitoring, evaluation and scaling up of the Model Watershed to be established by Development Alternatives in the Bundelkhand region of Central India.

URL: http://www.devalt.org/newsletter/sep10/of_4.htm



Title: Watershed Management Through Stakeholders' Participation

Author: Dr Shailendra Nath Pandey

Year of Publication: 2009

Keywords: Rain, Water, Environment, Biomass

Abstract: Approximately 170 million hectares in India are classified as degraded land, roughly half of which falls in undulating semi-arid areas where rain-fed farming is practised. Growing efforts by the state and different kinds of stakeholders to reverse this decline are often based on the rehabilitation of micro watersheds. This aims to establish an enabling environment for the integrated use, regulation and treatment of water and land resources of a watershed-based ecosystem to accomplish resource conservation and biomass production objectives.

URL: https://www.devalt.org/newsletter/jul09/lead.htm

Title: Las Gaviotas - Renaissance of the Rainforest

Author: Usha Srinivasan

Year of Publication: 2009

Keywords: Community, Water, Political

Abstract: Imagine miles and miles of desolate savannah in eastern Colombia, without a tree or bird or child insight, a veritable no-man's land. For Paolo Lugari, this was the perfect place to implement a vision: if a sustainable community could be created in such adverse environmental, social and political conditions, it could be done anywhere on the planet. Las Gaviotas has done just that, and much more.

URL: https://www.devalt.org/newsletter/jun09/of_2.htm

Title: Rainwater Harvesting: An Approach Towards Sustainable Water

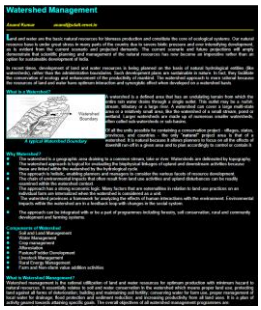
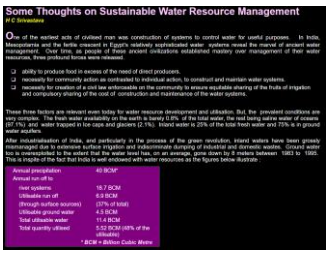
Author: Sonal Kulshreshtha

Year of Publication: 2008

Keywords: Water, Management, Harvesting

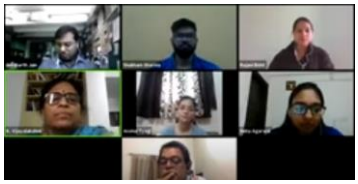
Abstract: The Bundelkhand region, which can be easily characterised by the ill effects of poor water management, has suffered a lot due to poor practices to manage water in the last 6-7 decades. At one time, this region was a pioneer in terms of water harvesting based on today's principles of watershed management practices.

URL: https://www.devalt.org/newsletter/sep08/of_2.htm

	**Title:** Watershed Management **Author:** Anand Kumar **Year of Publication:** 2003 **Keywords**: Land, Water, Development **Abstract:** This article focuses on the development of land and water resources is being planned based on natural hydrological entities (like watersheds), rather than administrative boundaries. Such development plans are sustainable. **URL:** https://www.devalt.org/newsletter/may03/of_1.htm
	**Title**: Watershed Approach: A Livelihood Option? **Author:** P S Chandrasekhra Rao **Year of Publication:** 2001 **Keywords**: Livelihood, Water, Community, Poverty **Abstract:** In recent years watershed management has increasingly become the focal point for poverty alleviation and drought mitigation particularly in rainfed areas of India. The article has attempted to examine the watershed approach in detail, both at the field/ground level as well as at the policy level and make suggestions for its adoption as a viable option for meeting the livelihood needs of the focus group, especially the vulnerable communities. **URL:** https://www.devalt.org/newsletter/apr01/of_2.htm
	**Title**: Some Thoughts on Sustainable Water Resource Management **Author:** H C Srivastava **Year of Publication:** 1997 **Keywords**: Water, Environment, Technology **Abstract:** Water resource management should not be viewed and practised in isolation - restricted to demand-supply aspect only; rather, it should be integrated management of all correlated environmental and social factors without which no tangible results will be possible irrespective of the technological development. **URL:** https://www.devalt.org/newsletter/jun97/of_3.htm

Audio Visuals	
	**Title**: Watershed Management (English) **Duration:** 5:28 mins **Synopsis:** This film showcases the watershed management programmes implemented by DA in the semi-arid and drought-prone region of Bundelkhand in Central India. These programmes have helped prevent soil run-off, regenerate natural vegetation, harvest rainwater and recharge groundwater, creating sustainable livelihoods for rural communities. **URL:** https://www.youtube.com/watch?v=aVPXm6Gc9JQ
	**Title**: Watershed (Hindi, Aug 2013) **Duration:** 5:41 mins **Synopsis:** This film showcases the watershed management programmes implemented by DA in the semi-arid and drought-prone region of Bundelkhand in Central India. These programmes have helped prevent soil run-off, regenerate natural vegetation, harvest rainwater and recharge groundwater, creating sustainable livelihoods for rural communities. **URL:** https://www.youtube.com/watch?v=ZzLF9lQ4ocw
	**Title:** Natural Resource Management **Duration:** 6:16 mins **Synopsis:** This film highlights the various solutions that DA offers under its Natural Resource Management Programme in the drought-prone and climate-sensitive region of Bundelkhand, Central India. These eco-solutions are helping in the sustainable management of natural resources for achieving food and livelihood security of the rural communities in the face of change. **URL:** https://www.youtube.com/watch?v=MyaonS2pOSI

	**Title:** Agroforestry (English) **Duration:** 4:44 mins **Synopsis:** This film showcases agroforestry as a key adaptation strategy in drought-ridden and climate-sensitive regions such as Bundelkhand in Central India. It highlights the different sustainable agricultural initiatives that Development Alternatives is promoting to help farmers reduce their risk and diversify their income sources. **URL:** https://www.youtube.com/watch?v=J3e-Uty5eGk
	**Title:** Agroforestry **Duration:** 5:00 mins **Synopsis:** This film showcases agroforestry as a key adaptation strategy in drought-ridden and climate-sensitive regions such as Bundelkhand, Central India. It highlights the different sustainable agricultural initiatives that Development Alternatives is promoting to help farmers reduce their risks and diversify their income sources. **URL:** https://www.youtube.com/watch?v=B6kdSDFnwbU
	**Title:** Roots of Datia **Duration:** 20:54 mins **Synopsis:** More than half a century ago, Datia, a district in Bundelkhand was full of lush green forest and wild animals. But the forest disappeared due to several reasons and the love of people for the forest remains in people's memories and is sustainably based on the folk songs of the region. This film is about how two barren hillocks transformed into a green forest by the effort of a wizard named retired Air Vice Marshal S Sahni, who is fondly called AVM by his colleagues in Development Alternatives, an NGO working towards sustainable development. **URL:** https://www.youtube.com/watch?v=SKcw6f3scE8
	**Title**: Watershed-Short-Film **Duration**: 3:00 mins **Synopsis**: This film showcases the watershed management programmes implemented by DA in the semi-arid and drought-prone region of Bundelkhand in Central India. These programmes have helped prevent soil run-off, regenerate natural vegetation, harvest rainwater and recharge groundwater, creating sustainable livelihoods for rural communities. **URL:** https://www.youtube.com/watch?v=sFDm0YPWdKM

	**Title**: Lecture series on Water Resource Management for Sustainable Development **Duration**: 1:44:02 hours **Synopsis**: This lecture series talks about how to manage water resources and implement them towards a sustainable livelihood. These eco-solutions will help in the sustainable management of natural resources for achieving food and livelihood security of the rural communities in the face of change. **URL:** https://www.youtube.com/watch?v=fz_l8gNH27E

About Development Alternatives Group

Development Alternatives (DA) is a premier social enterprise with a global presence in the fields of green economic development, social equity and environmental management. It is credited with numerous technology and delivery system innovations that help create sustainable livelihoods in the developing world. DA focuses on empowering communities through strengthening people's institutions and facilitating their access to basic needs; enabling economic opportunities through skill development for green jobs and enterprise creation; and promoting low carbon pathways for development through natural resource management models and clean technology solutions.

Development Alternatives

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