



Environment

**Water & Environmental Sanitation Network
(WES-Net India)**



Solution Exchange for WES-Net India Consolidated Reply

***Watershed Development: Alternative Financing Mechanisms,
from German Development Bank, New Delhi (Experiences).***

**Compiled by Preeti Soni, Resource Person and Moderator; additional research
provided by Ramya Gopalan, Research Associate
22 February 2006**

**Original Query: Nand Kishor Agrawal, KfW – German Development
Bank, New Delhi**

Posted: 30 January 2006

This query is about the financing mechanisms for the watershed development programmes in India. In the Indian context, these programmes, whether government funded, externally funded or privately funded, have been mostly grant based. Apart from some contribution in the form of labour by the community, these programmes involve funds that are almost 100% subsidy in most cases. One of the issues in this relation is that a full subsidy approach makes the programme dependent entirely on availability of grant funds of the governments and other agencies, therefore, confining the expansion of the programme.

We are trying to understand and explore the alternative financing mechanisms for these programmes without compromising any of the basic principles of social and gender equity and community based approach. The key question is that whether the watershed development programmes have potential to attract any alternative financing models like:

- Loan funds from commercial banks at market rates;
- Reduced interest or zero interest loan funds from development finance institutions;
- Mixed financing (subsidy for public good components and loan for economic good components) from a combination of financing institutions;
- Multiple financing sources like government subsidy, corporate financing (as business model or as charity), community generated revolving fund, and cash/kind contribution from individual end-users/villagers; and
- Any other financing model involving reduced subsidy than the current financing model.

I would be grateful to the members for sharing their experiences and lessons learned if there are already some experiments in India on this? Have the experiments been successful? Do the experimenters see any potential to institutionalize and upscale the successful models?

Responses received with thanks from:

1. [Pranab R Choudhury](#), Independent Consultant, Bhubaneswar, [Response 1](#); [Response 2](#)
2. [Avani Mohan Singh](#), Haritika, Sangli
3. [N.V. Umamahesh](#), National Institute of Technology, Warangal
4. [Bansi Lal Kaul](#), Society for Popularization of Science, Jammu
5. [Gopi Ghosh](#), FAO, New Delhi
6. [Shashidharan Enarth](#), Development Support Centre, Ahmedabad, [Response 1](#); [Response 2](#)
7. [Sudarshan Iyengar](#), Gujarat Vidyapeeth, Ahmedabad
8. [Dinesh Kumar](#), International Water Management Institute (IWMI), Anand
9. [Mihir Maitra](#), India Canada Environment Facility (ICEF), Delhi
10. [Nand Kishor Agrawal](#), KfW Office, New Delhi
11. [V. Kurian Baby](#), Socio-Economic Unit Foundation (SEUF), Kerala
12. [L.P.Semwal](#), Shri Jagdamba Samiti, Rishikesh, Uttaranchal

Further contributions are welcome!

Summary of Responses

Members' response to alternative financing models was positive. Their response highlighted that watershed development is a key intervention strategy, hampered by inadequate financial resources. A number of experiences on alternative finance mechanisms are enumerated here.

Watershed development approach was adopted in the 1970s, with a limited objective of conserving soil-moisture content and protection of catchments. Overtime, social and economic aspects of, promoting social/gender equity, empowerment, and poverty alleviation, were added to it. There is further scope for addressing these aspects. But the respondents added that when communities contribute resources, it ensures their active involvement/participation and thus ensures long-term sustainability of watersheds.

Alternate financing - existing examples: A number of alternate finance mechanisms such as loan funds at market rates, at reduced rates of interest and mixed financing strategies, with varying degrees of corporate and government financing as well as community contributions are in operation in some areas/projects. Members' experiences in various states highlight these options. In [Madhya Pradesh](#), a sanitation fund has been created which serves as a loan facility for the community to be used for sanitation requirements. In [Tamil Nadu](#), a water credit initiative provides credit through organizations and the water fees paid by communities is used by the organizations to repay loans. In [Warangal](#), the initiative implemented seeks part contribution from the communities while the majority contribution comes from the District water Management Agency, the surplus (due to added community contribution) is directed towards general development of the village. In [Kerala](#), private household watershed investment in farm/homesteads with 100% self financing have been undertaken successfully. Other models highlighted by the members was: the [mixed financing](#) model which was a package of a subsidy and loan as undertaken by fertilizer cooperatives which allowed for government subsidy, grant, corporate and community contributions.

Some specific **problems** recognized by members include the following

- Poor co-relation between investments made by poor people and the benefits they receive.
- Lack of orientation to involving the local people- and especially involving women, and transparency, and accountability among line departments.
- Lack of coordination between departments of land resources, agriculture, forest, finance, etc.

The **key challenges** thus are to ensure that incremental private investment would equal both, incremental benefits, and progressive pricing for the poor. Additionally there is a lack of enforcement mechanism to ensure gender equity and representation, to facilitate investment especially for common lands. These challenges need to be addressed while upscaling.

Thus members suggested that mixed investment strategically combining government funding, and community contributions, with corporate funds, (if not as a donation, as a business-linked proposition), aids from multilateral development agencies, and loans from financial institutions, need to be practically explored, for sustainable development of watersheds in the country.

Members' experiences of alternative finance mechanisms are detailed below.

Comparative Experiences

From [Avani Mohan Singh](#), *Haritika, Sangli*

Sanitation Fund, Jhansi, Madhya Pradesh

In this experience, Haritika working along with Water Aid UK under the Drought Prone Areas Program (DPAP) in Babina block of Jhansi district have adopted a sanitation fund which is used as a loan provided to the community for constructing latrines and such other things.

Water Credit Initiative, Tamil Nadu

A new initiative called water credit initiative provides access to credit, a tool which communities can use to finance the cost of building safe drinking water systems and sanitation facilities. How this works is essentially through Credit, provided through existing water supply organizations and micro-credit organizations. Organizations repay loans with funds generated by water fees. This fund is used for safe drinking water and it is a loan for the community. A strong emphasis is placed on building the capacity of community-based organizations (CBOs). Projects are ongoing in the districts of Melanaduvalur, Kanganipatti, Morrupatti, and Ponnusangampatti. See [Water Partners International](#)

Cash/kind contributions, Warangal (from [N.V. Umamahesh](#), *National Institute of Technology, Warangal*)

The National Institute of Technology selected as one of the Project Implementing Agencies (PIA) to implement the watershed development programme under the Integrated Wasteland Development Programme (IWDP) in 4 villages in Warangal District, AP. As per the guidelines for implementation the users/beneficiaries finance 5 to 10% of the cost of the works undertaken under this programme, while the remaining amount is provided by the District Water Management Agency (DWMA). This was revised to 25% additional contribution from the beneficiaries by the Project Director of DWMA. Thus effectively only 65 to 70% was subsidised by DWMA for undertaking the. The 25% additional contribution was diverted to village development fund used to finance various community development activities in the village. In spite of initial apprehensions the idea was welcomed with villagers coming forward voluntarily. This experience enumerates the possibility of exploring cash/kind contributions from beneficiaries as an additional source to finance watershed development works.

Mixed Financing (from [Mihir Maitra](#), India Canada Environment Facility (ICEF), Delhi)

Experience was varied in two ICEF funded participatory irrigation management projects where the communities had to pay 30% of the canal repairing cost upfront. In one case contribution had to be reduced to 20% in mid-course in order to complete the project in time while in another case a collateral guarantee was required to be deposited in the bank for releasing loans to the Water Users associations (WUAs) to pay their contributions which were paid back later by most of the WUAs during the project period itself. The project also helped the WUAs to raise a revolving fund. This experience also indicated that contribution through labor is relatively easier to mobilize especially when the wage rates are higher.

Related Resources

Recommended Organizations

From [Avani Mohan Singh](#), Haritika, Sangli, Maharashtra

Haritika, Sangli

Mahendra puri, Jhansi – 284003

Phone: 91 517 331023

and

Water Aid, UK

www.wateraidindia.org

For information on a sanitation fund jointly promoted in the district of Jhansi which is used as a loan provided for the community to construct latrines, etc.

Water Partners International, USA

<http://www.water.org/watercredit/>

This organizations is recommended for their new water credit initiative which is fund that is a loan for the community and is used for safe drinking water

From [N.V. Umamahesh](#), National Institute of Technology, Warangal

National Institute of Technology, Warangal

Recommended as an institute identified as one of the Project Implementing Agency (PIA) for implementing watershed development program in Warangal district

From [Gopi Ghosh](#), FAO, New Delhi

Watershed Support Services and Activities Network (WASSAN), Hyderabad

www.wassan.org

WASSAN works towards bringing about qualitative change by providing capacity building and support services in watershed based development programs in India

Watershed Trust (WOTR), Maharashtra

www.wotr.org

A development support team working towards empowering rural men, women and children and other organisations for integrated watershed development

Land Rights Cell, VASUNDHARA, Bhubaneswar (from [Pranab R Choudhury](#), Independent Consultant, Bhubaneswar)

Email: vasundharanr@satyam.net.in; Website: www.vasundharaorissa.org

For information on field studies and policy analysis in collaboration with watershed projects on the issues of land rights particularly advocacy initiatives

India – Canada Environment Facility (ICEF), New Delhi

<http://www.icefindia.org/building.htm>

Recommended for information on participatory irrigation management projects, funded by ICEF in an effort to build capacities

Watershed Management Directorate (from [Ramya Gopalan](#), Research Associate)

Uttaranchal State Unit, Dehradun

<http://www.gov.ua.nic.in/wmd/>

The directorate has implemented several Watershed Management Projects funded by different external funding agencies in the state of Uttaranchal.

Recommended Contacts

S.P. Jain (from [Gopi Ghosh](#), FAO, New Delhi)

Email: drjain@sapta.com

Recommended for information on innovative financing patterns for watershed development

V. Kurian Baby, Socio-Economic Unit Foundation (SEUF), Kerala

Email: kurianb@yahoo.com

Recommended for his experience in private household watershed investment in farm/homesteads

Recommended Websites

From [Ramya Gopalan](#), Research Associate

Watershed Summit

Chandigarh, 2004

<http://www.indianwatershed.com/>

For information on the contradictions and challenges faced in the World Bank supported Integrated Watershed Development Project (IWDP)

MANAGE Cyberary

Watershed Management Extension Digest, National Institute of Agricultural Extension Management, July 1999

<http://www.manage.gov.in/managelib/extdig/Jul99Water.htm>

This issue focuses on Common Approach/ Principles, indigenous technical knowledge, information technology applications and documents country wide watershed successes.

Recommended Documentation

From [Gopi Ghosh](#), FAO, New Delhi

UPSCALING SUCCESSFUL EXPERIENCES IN THE MAINSTREAM WATERSHED PROGRAMME IN INDIA

October 2005

<http://www.wassan.org/Study%20Report/DANIDA%20Publication.pdf> (Size: 1006 KB)

The paper is based upon detailed case studies of watershed projects funded by DANWADEP in three states namely Orissa, Karnataka and Madhya Pradesh

Report on the Self Evaluation of WASSAN's Promoting and Strengthening Watershed Based Natural Resource Management Initiatives, July 2000-November 2001

C. Ravikumar, Bangalore, March 2002

http://www.wassan.org/Self_Evaluation/Self_Evaluation_Report.PDF (Size: 182 KB)

The report facilitates WASSAN's self-reflection on its institutional development, strategic positioning and contribution to the development of watershed program/NRM in the state

Expansion: From One to Many

Watershed Organisation Trust (WOTR), Maharashtra

<http://www.wotr.org/expansion.htm>

Examines expansion as a function of participation at the watershed level, the local milieu and between the two that is required in watershed communities

Additional documentation identified by [Ramya Gopalan](#), Research Associate

India – Watershed Development Project

World Bank, Vol. 1 of 1, 2005

<http://www->

wds.worldbank.org/servlet/WDS_IBank_Servlet?pcont=details&eid=000090341_20060117100017

Provides the outcome for Integrated Watershed Development Project for India covering its sustainability, impact of institutional development and borrower performance

Guidelines for watershed development

Revised - 2001, Department of land resources, Ministry of Rural Development (MoRD)

<http://dolr.nic.in/guidewd.htm>

Recommends set of operational guidelines, objectives, strategies & expenditure norms for watershed development projects integrating features of three programs under MoRD

Integrated Watershed Development Project (IWDP) - Shiwalik Project

Watershed Management Directorate, Uttaranchal State Unit, Dehradun

<http://gov.ua.nic.in/wmd/html/IWDP/Iwdp.htm>

Provides a summary of the IWDP funded by the World Bank undertaken in Shiwalik hills covering parts of Pauri District of Garhwal region, Udham Singh Nagar & Nainital District

Uttaranchal Decentralized Watershed Development Project

Watershed Management Directorate, Uttaranchal State Unit, Dehradun

<http://gov.ua.nic.in/wmd/html/UDWDP/udwdp.htm>

For objectives, cost, main components and other details on this project aiming at natural resource management through Gram Panchayats (Village Level Panchayats)

Project Evaluation - Executive Summary

Ministry of Rural Development (MORD), Government of India

<http://rural.nic.in/jry2/eswshed.htm>

A study, evaluating various watershed programs, based mainly on primary information & data collected from selected districts, watersheds & beneficiaries through field survey

Rainfed Farming Systems

Department of Agriculture and Cooperation, Ministry of Agriculture

<http://agricoop.nic.in/Annual-Rep04-05/chap11.pdf> (Size: 60 KB)

For the overall objectives and status regarding National Watershed Development Project for Rainfed Areas (NWDRA), operating under the macro management mode of funding

Harvesting rain, auctioning gain

Dr. Sudhendar Sharma, InfoChange News & Features, July 2004

<http://www.infochangeindia.org/features187.jsp>

Explains the new participatory approach to watershed development, auctioning of water in the Integrated Watershed Development Project in the Shivalik foothills of Haryana

Related Past Consolidated Replies

Consolidated Reply: Integrated Watershed Approaches/from WASSAN, Hyderabad/Comparative Experiences

<http://www.solutionexchange-un.net.in/environment/cr/cr-se-wes-15010601.doc> (Size: 114 KB)

Provides information and experiences regarding watershed projects attempting to address or develop a large area in an integrated manner

Responses in Full

Pranab R Choudhury, Independent Consultant, Bhubaneswar

Thanks for putting up a very important query. Probably time has come to review watershed based development investment. Whether it is appropriate in addressing poverty alleviation/vulnerability mitigation squarely through a programme like watershed development approach, probably need to be debated. While not questioning the ability of watershed programmes in transforming poverty geographies of India, one needs to see whether they have been effective in really addressing the issues of poverty alleviation. Poverty being mostly a household or individual phenomenon, the approach of alleviating it through developing an 'area' (through area based approach) in a 'community' based approach like watershed, which usually does not discriminate the area or households of poor, in most cases have not yielded desired results.

About three fourth of investment in watershed programmes go towards land development (or water resource development which is again manifested in augmenting land productivity). While on one hand, land owners get heavily subsidized (requirement is only some contribution), on the other hand, an interest rate is charged to the poor, who are given loan/revolving fund support through SHG. Isn't it a paradox, that we subsidize the rich and penalize the poor through present approach? On the other hand, as we see in Orissa, the land ownership is highly skewed with only about one third of land, privately owned (other one third is owned by forest department and another third are revenue wasteland owned by state). In such a backdrop, such a heavy subsidized investment on private land will lead to only furthering divide between poor and rich. There has also been lack of viable technical and institutional options for passing benefits to poor through treatment of CPR. Past experiences and present instances show there have been temporary and permanent alienation of poor from in treatment of such commons.

Further, we have seen there have been iniquitous price realizations of the poor villagers in trade of agriculture products and NTFP and there have been lots of market distortions and exploitations. When through watershed programmes, the productivity is enhanced and there are higher marketable surplus, one can imagine only the benefits passing on to traders and middlemen or even consumer and surely not to the farmer producers.

Such a scenario implies that, in order to squarely address the poverty through watershed based investments, we need to rethink and re-strategize. While the watershed development approach should continue, probably there is need of investing more on backward and forward linkages than investing heavily on productivity enhancement. As backward integration, there is perceptible need to invest on facilitating and enhancing rights and access to land by poor and developing institutional and technical options to safeguard continued benefits to the poor. Similarly, investments on market and processing and the related institutional arrangements may be what is required as forward integration measures. There is also need to revisit the financial options and products facilitated through watershed based approaches, like funds for SHG (can there be differential interest rates for poor and rich or between consumptive and productive loan) or watershed development fund (why to keep it idle during project implementation?). So there is not only need to understand and explore alternate financing options, probably there is also pressing requirement for re-strategizing sectors of investment in a watershed approach for ensuring benefits to the poor.

After all, most of our land water development practices/technologies/options(paddy terraces of eastern ghats or the himalayas or dry stone terraces in all hill regions or water management options in coastal plains etc.) have been carried out with (most of the poor) people's own investment where there is a perception of property rights. Probably we need to have better understanding of the ground situations and dynamics and invest accordingly to ensure equity and sustainability.

Avani Mohan Singh, Haritika, Sangli

I agree with you that the ongoing watershed development project like DPAP/IWDP is running without much emphasis on community contribution. We have also worked under DPAP project in Babina block of district Jhansi. At present we are working with Water Aid, UK where we have sanitation fund, used as a loan provided to the community for constructing latrines and such other things. I have gone to see the website of [Water Partners International](#), USA, where they have started a new initiative called water credit initiative. This fund is used for safe drinking water and it is a loan for the community.

I think a new beginning can be started and hope this will work.

N.V. Umamahesh, National Institute of Technology, Warangal

With reference to your query, I would like to share our experience in implementing the watershed development programme in Warangal District of AP. Our institute was identified as one of the Project Implementing Agencies (PIA) for implementing the watershed development programme in Warangal District. We implemented this project in 4 villages under the Integrated Wasteland Development Programme (IWDP).

As per the guidelines provided for implementing the project, the users/beneficiaries are expected to finance 5 to 10% of the cost of the works undertaken under this programme, while the remaining amount is provided by the District Water Management Agency (DWMA). However the Project Director of DWMA has taken a decision in consultation with all PIAs to insist upon 25% additional contribution from the beneficiaries. Thus effectively only 65 to 70% was provided as subsidy from DWMA for undertaking the works under IWDP project. The 25% additional

contribution made by the users was diverted to village development fund which is used to finance the various community development activities taken up in the village. There were few apprehensions among the PIAs initially on the acceptability of this proposal among the villagers. However the idea was welcomed in general by the villagers and they voluntarily came forward to contribute to the village development fund.

Based on my experience with this experiment in some villages of Warangal District, I feel we can explore the possibility of using the cash/kind contributions from the beneficiaries as an additional source for financing the watershed development works.

Bansi Lal Kaul, Society for Popularization of Science, Jammu

The query of Mr. Nandkishor and the response by Mr. Choudhury are very relevant. Water shed development is indeed important but there are certain connected issues which need serious consideration. Firstly there are too many agencies involved in watershed development and there is often a lack of co-ordination between them and sometimes avoidable overlapping occurs in their areas of action. The benefit of watershed development programmes meant for the poorest of the poor often does not go to them. It is therefore relevant, as pointed out by Mr. Choudhury, to have a household approach in the watershed development programmes. Secondly there is an intimate relationship between watershed development and wetlands. The latter have been depleted to a great extent in recent times. These water bodies provided varied types of fish to the rural poor and provide them a rich source of proteins virtually at no cost. But not so now for there are hardly any wetlands left. And if there are any left these are polluted to such an extent that there are no fish left in them. In my opinion watershed development programmes should also aim at revival of wetlands for these are useful to mankind in many ways.

Gopi Ghosh, FAO, New Delhi

Rainfed areas are critical for reducing regional imbalances and tapping the potential of these areas where a large section of poor people reside. In this, watershed development is key intervention strategy and its expansion is hampered by adequate financial resources. While the utilization of current resources thru adoption of improved operational modalities, prevention of leakages, avoidance of duplicity, ensuring better physical structures and social concerns thru village level mechanisms and instruments etc are highly required, innovative strategies like changing 80:20 (Govt : private resources) financing pattern to even 20:80 pattern are also suggested by some practitioners like Dr SP Jain (Ex-World Bank) (drjain@sapta.com) to radically upscale the coverage. Through these measures people's stake is also enhanced significantly - ensuring their utmost attention, active participation and heightened desire for ownership to such sustainable community-based projects.

I think the Report on the Self Evaluation of WASSAN's "[Promoting and Strengthening Watershed Based Natural Resource Management Initiatives](#)" Project July 2000-November 2001 would be somewhat useful.

Further DANIDA's Watershed Development programme (DANWADEP) had worked in three states Orissa, Karnataka and Madhya Pradesh and captured the lessons learnt in a book appropriately titled- UPSCALING SUCCESSFUL EXPERIENCES IN THE MAINSTREAM WATERSHED PROGRAMME IN INDIA as recently as in October 2005. Three anchor organizations namely Watershed Support Services and Activities Network (WASSAN), Poverty Learning Foundation (PLF) and Watershed

Trust (WOTR) joined this effort. It is published by [Watershed Development Coordination Unit](#). You can visit their websites for this and other related reports. I specially recommend seeing the link of [WOTR - Expansion: From One to Many](#).

[Shashidharan Enarth](#), Development Support Centre, Ahmedabad

Public money in the form of subsidies is certainly not adequate to address even a fraction of watershed development work that is so acutely needed. The biggest potential source (quantitatively), and the best source (qualitatively) of funds is the farmers and resource users. Irony is that they also happen to be the most reluctant to contribute. We know that when owners/users pay the bill, the quality of work, its appropriateness etc are better ensured than when public agencies or even NGOs bring the funds. We know that most physical interventions are labor intensive and therefore can come from even poorer families.

The question we must ask ourselves is "why does the most significant stakeholder have the least incentive to share the cost?" The answers to this question (as always, there will be no ONE answer) will give us some workable ideas to solve the conundrum. From my experience, let me list out a few points:

1. Investments will be forthcoming when (and only when) returns are tangible, reasonably assured and directly attributable to the invested amount. This is unfortunately a condition that doesn't fit watershed technology so well. We know that collective action is required for many treatment activities even when there is private benefit. Are there ways of isolating some of the watershed activities where benefits and costs are directly linked and externalities are minimal? I believe there are. Such activities can have minimum subsidies.
2. Integrated watershed would entail substantial common lands. This makes it difficult to solicit contribution and even more difficult to manage it sustainably and equitably. As with any commons, the answer probably lies in redefining property-rights. There must be enforceable ways, legal and social, to assign individuals or limited-sized groups the rights to access and benefit from such commons? This will not be outright ownership, but perhaps enforceable user-rights.
3. You mentioned corporate source of funding. The scope for charity mode is miniscule, but the business link is certainly the one that is most likely to succeed. There are mutually beneficial investments in watershed development that will kindle the interest of private enterprise. We must keep in mind that most innovations and agricultural breakthroughs have happened when market provided the right incentive.

All three observations have one important common thread that runs through -- they will require a much more reliable, fair and transparent governing environment. A operating rule while dealing with investors is --- Investors look for maximizing gains, be it legitimate or otherwise. There must be institutions and mechanisms to enable them pursue legitimate gains and restrain them from abusing or exploiting. Do we have such institutions in the present time? No. Can we create them? Certainly yes.

[Sudarshan Iyengar](#), Gujarat Vidyapeeth, Ahmedabad

The investment in watershed development has to be viewed as investment in infrastructure. Land and water are sources for production owned privately, publicly and by community and hence the property rights are mixed. It is an artificial division where the private owners can not be assured and be convinced that private investment by the owners would yield direct and tangible result in favor of the investor and hence under such cases the source becomes infrastructure.

As the State has responsibility to invest in infrastructure and the economic gains accruing to individual users is a net social gain, in the same vein there has to be substantial public investment. Instead of direct subsidies on inputs, it would be wise to invest on infrastructure. There can be a user fee chargeable on capital expenditure relating it with the economic life of the investment. The State might think of collecting it either as participation share or as deferred part installments. The maintenance should be borne by the private users as individuals or as group members.

All other form of help corporate, co-finance etc. is welcome, but the State has to take the final responsibility in making the investment. If this programme is prioritized then other programmes can wait.

Dinesh Kumar, International Water Management Institute (IWMI), Anand

After reading the emails queries from Mr. Nandkishor and the subsequent response from Mr. Pranab Choudhury (both I value very much), I am inspired to write this long mail. Hope, at least some of you would find it useful. I would be sorry if it does not serve any specific purpose.

First of all, such reactions (like what raised in the query) are expected. When we started watershed investment (probably by technical support agencies) in late 70s, it had the modest expectation of soil moisture conservation and the resultant biophysical changes. The government wanted watershed management as a measure to prevent catchment degradation u/s of large reservoirs, as part of water resources management strategy. Gradually, we started talking about socioeconomic changes and institutional development to ensure sustainable development and promotion of equity. Perhaps, we were worried that the land owners are intensifying cultivation and moving to more resource intensive and unsustainable farming after treatment.

We wanted human resources development inside (and also outside) the watershed from this small investment. For that we wanted technical and organizational training for sustainable watershed development and management (and often did not know whom to train). Some people started talking about "watershed +" and "watershed ++". If I remember correctly, it was in the Delhi conference on watersheds in 1998.

We wanted to see major social changes (education, women's empowerment, access equity in resource distribution). We were worried that landless were not getting any benefits (though we were also not also certain that significant benefits were accruing to the landowners). Some started talking about forward and backward linkages. I could never understand, neither did I try to understand these terminologies (blame it on my limited background of hydrology and water resources engineering). My limited perspective forced me to think about what was happening to the soils and biomass in the watershed. My ignorance suggested that if there are good soils and good moisture, farmers would find ways to make use of it. Some wanted drinking water security through watershed and started assessing watershed programmes with those considerations.

Then the time came when we talked about "poverty alleviation" through watershed development. Some people started talking about "watershed development" as an alternative to some mammoth schemes which would cost only Rs. 56,0000 crores to the country's exchequer. However, I am

yet to see a micro watershed development programme supplying a few hundred cubic metres of water to irrigate crops. It has transformed from a technical intervention to techno-economic intervention to socio-technical intervention to a paradigm of “development of people living inside and outside the watershed” to a “philosophy of life”? While all these were happening, scientists were trying to design methods and tools to quantify the bio-physical and hydrological impacts but with little success. Now, we wanted to analyze the impact of watersheds on poverty, security, sustainability etc. – the more complex social phenomena. It was sometimes indicated that watershed increased poverty and inequity!

I do not believe that people and governments alike in other countries are looking at such small programmes like watershed development/management as a tool for poverty alleviation and empowerment (please tell me if I am wrong). For us watershed is a “Kamadhenu”, the holy cow to quench all our material, social and psychological thirsts. Even if we put half of India’s land area under watershed programme, it would cost us only 80,000 crore rupees. This is not a big deal for us now. But, the point is by the time we complete the second one lakh ha, the first one lakh ha would be ready for the second round of treatments. Friends, doesn’t this imply that “sustainable watershed development” maybe a myth. Watershed hydrology would change due to changing land use; not only that happening in the upper catchments, but also in the plains where farmers cultivate.

I have no doubt that had we concentrated only on the limited objective of soil and water conservation, we would have achieved hundred times more than what we got by now. In many treated watersheds, we find bus shelters, crematoriums, and hand pumps.

Colleagues: treat this as a sudden outburst of frustrations, and not sharing of my wisdom.

Mihir Maitra, India Canada Environment Facility (ICEF), Delhi

It is true that lack of availability of grant/fund is confining the expansion of watershed development programme (WSDP) in the country. But at the same time we hear that after the initial years of excitement, the centrally sponsored programme of Ministry of Rural Development on Watershed development (WSD) do not have many takers now and National Watershed Development Programme in Rainfed Area (NWDPR) of Ministry of Agriculture has become the “old wine in the new bottle”.

The points I am trying to make are a) It is not the fund alone which is restricting the WSD programme in India; a great deal of capacity building inputs have to go in to the line departments who for the obvious reasons resist community based approach. b) The scopes for improving project delivery mechanism and concepts of accountability need to be redefined adequately and adopted; this would require management inputs from sources outside Government c) There are not many established NGOs who could coordinate adequately with banks for loan, Governments for subsidy and communities for their share without a favourable environment /mechanism/support etc. d) Centrally sponsored programmes do not have any mechanism for self improvement etc.

In two ICEF funded participatory irrigation management projects where the communities had to pay 30% of the canal repairing cost upfront, we had varied experience. In one case we had to reduce the contribution to 20% in the mid-course in order to complete the project in time and in another we had to deposit a collateral guarantee in the bank for releasing loans to the Water Users associations (WUAs) to pay their contributions which were paid back later by most of the WUAs during the project period itself. The project also helped the WUAs to raise a revolving

fund. Contribution through labour is relatively easy to mobilize especially when the wage rates are taken on the higher side.

Amongst the options (models) suggested in your query , model 3 (Mixed Financing i.e. subsidy plus loan as a package) is worth pursuing for a development funding agency in projects where inputs/outputs are in direct proportion and are measurable as is done in "service sectors". Of let the multiple financing model (option 4) i.e. Government subsidy plus Grant, plus corporate contribution plus community contribution are doing fairly well (e.g. Projects by Fertilizer cooperatives like IFFDC, IPL, CRIBCO etc.). Finance Institutions may also find a niche in option 4 depending upon the role it chose to play.

[Nand Kishor Agrawal](#), KfW Office, New Delhi

Thank you for your responses. A few quick comments:

The issue of many agencies working on watershed in one area, as raised by Mr. [B. L. Kaul](#), is of real concern. Just at the time when a community is convinced by a progressive PIA to contribute more than the standard requirements in a watershed project, one would find another agency, working with the same or some other funding source, offering the project to a nearby community at much softer terms! This makes things difficult and undermines the communities' ability to contribute, and therefore 'own' the project. Although, there cannot be a standard set of rules applicable for the entire state or a very large area, there should be efforts to coordinate things at the district level.

The other issue, raised by Mr. [Choudhury](#), regarding watershed being biased in favour of land owners. Very True. As nicely explained in his reply, I think this is one of the reasons why we need to explore Alternative Financing Mechanisms more vigorously than before. Another reason obviously, as mentioned by Mr. [Gopi Ghosh](#) and Mr. [Shashidharan](#), is expansion of the programme. Here the concept of water credit as being experimented by HARITIKA sounds interesting. Maybe Mr. [Avani Mohan Singh](#) would like to share the results so far, particularly at the community level. Do the communities open to and 'appreciate' the idea? I just want to add an example here: The enrollment in the primary education is now more or less universalized. Not only because of government or NGOs supporting this but also because communities, even the poorest of the poor 'feel' that s/he 'should send' the children to school irrespective of whether or not subsidized education is available. Similarly, whether we can reach a stage where communities 'feel' the same way for water conservation whether it is subsidized or not is a question.

Response of Mr. [Shashidharan](#): I think his analysis of the issue and 3 possible approaches are extremely useful and practical. Although given the JFM experience, I am not confident about the approach on rights and access to common property by individuals or limited sized group but probably that is the most solid solution if necessary legal provisions can be established. I would very much appreciate if Shashi or other group members could provide links to further analysis or experiences on the 3 points mentioned in the reply. I think we all will be benefiting a lot from this.

[V. Kurian Baby](#), Socio-Economic Unit Foundation (SEUF), Kerala

Many thanks for raising a very pertinent query regarding the financing pattern of watershed programmes in India. For the last many years, I have been directly and indirectly involved in planning, implementation and monitoring of watershed programmes in Kerala. From my experience, the greatest bane is grant based, target oriented investments leading to unsustainability on account of poor ownership.

However, let us have greater understanding of the investment dynamics in watershed which is still dominated by household private sector. For the purpose, we may classify a watershed into (a) cultivated private holdings; (b) uncultivated/barren private holdings and (c) commons including forests. As every household wanted to maximize return, homestead /farm lands are being treated to varying degrees using household/institutional finance, which are also maintained well. Here the key concerns are possible unscientific technical choice/treatment and overexploitation /mismanagement by private interests. The question of grant based treatment is mainly pertaining to the commons, where the key institutional actors are the Government/NGOs/Communities. As regards institutional finance at market/subsidized rates, the weak direct/visible correlation between individual incremental investment and individual incremental water yield act as disincentive. However, appropriate institutional mechanisms and sharing /pricing policies, probably linked to the three tier Panchayati Raj Institutions (PRIs) may work and there is scope for experimentation. In India there are many models community/NGO initiatives outside/supplementary Government programmes having capital contribution of varying degrees even to the extent of 100%, generally triggered by crises. In Kerala, we have been really successful in private household watershed investment in farm/homesteads to the extent of 100% self financing. So also we have success stories of focused recharge programmes for augmenting drinking water.

According to me, the key challenges at large are (a) how to ensure the incremental private investment would at least equal incremental benefits and (b) for treatment in commons, what institutional/sharing/pricing/enforcement mechanism could be credibly institutionalize *to facilitate investment*.

[Shashidharan Enarth](#), Development Support Centre, Ahmedabad

The skepticism regarding reforms in property rights is very much understandable. Yes, JFM has demonstrated that it takes very little effort by a public agency to undermine well conceived people's initiatives. There is no escape from the reality that a qualitative and quantitative breakthrough in watershed program (or for that matter any NRM program) will happen only when state departments are re-cast, made accountable for results and some of the archaic constitutional Acts are revised. We are kidding ourselves by thinking that we can come up with a brilliant idea that will work without substantial change in state apparatus and policies. Either of the two things have to happen -- (i) we shift the locus of control over resources (natural and financial) away from bureaucracies and into a domain of people's institutions, or (ii) Change the mandate and governing systems of bureaucracies to make them accountable to resource end-users. You will see that both are SIGNIFICANT transformations. But then we have come to a stage where the improvements we seek are indeed quantum leaps. Tinkering with one end of the spectrum (project implementation strategies) seems to have little impact on the big picture.

If that appears radical, is there is a midway change? Probably. Remember the MoUs that District Rural Development Agencies (DRDAs) entered into with Project Implementation Agencies (PIAs) of the watershed program in some states? It was one of the most lopsided one we can think of. PIAs were crucified for any lapse, was scrutinized to the last penny, and hounded by audits and threats. And what did the DRDAs have to do to earn this

right? Nothing. To get the change started we can continue with the stringent service standard for the PIAs but also lobby for a more two-way MoU with any state agency that will hold them to account if their outputs are not achieved. That may be a "do'able" reform in terms of organizational change. The challenge is in setting measurable, verifiable outputs. Difficult, but not impossible. I can well imagine the DRDA project officer or the DFO losing sleep over lack of participation from people for lack of clear property rights or entitlements. Once that happens then all actors are on one side, not fighting or undermining each other.

The problem that Mr B L Kaul is referring to is the result of the perversion that exists today in the market-place of "implementing agencies". They are only accountable for tasks, not results or impact. They can out-bid each other with competing subsidies because they can get away with the drill of carrying out the tasks -- check dams will be built, trenches will be dug, saplings will be planted, salaries paid, All this, without the crucial question -- did these activities yield the stated impact for the end-user. Are there mechanisms available for the end -user to complain if it didn't? Can the end-users pull the plug from the implementing agencies source of funds? Very unlikely, despite the 73rd Amendment. So PIAs can hard-sell their "product" by offering higher subsidy, run down the quality of work and not be concerned about end results.

This may appear to be a rambling, and it might well be. But I have seen this pattern not just in Gujarat or other states in India, but in some African countries too. The multilateral funding agencies are now pooling in their resources so that they can come to the table with common expected outcomes. So nobody goes shopping for the "softest" terms. Nandu and German Development Bank may be in a good position to emulate this approach (referred to as SWAP -- sector wide approach). I would encourage you to try it.

L.P.Semwal, Shri Jagdamba Samiti, Rishikesh, Uttaranchal

Thanks for raising query on alternative finance option for watershed development. I would like to respond on the basis of our experience of working with the farmers groups in hilly areas of Uttranchal as:

- 1- Mixed financing (Grants for public good components like water harvesting and storage structures and common facilities and loan for economic good components like private agriculture land treatment, value addition and introducing cropping pattern) should be the better combination of financing from Govt. /Donors and financing institutions.
- 2- For application of these an integrated approach of scheme implementation is necessary like inter departmental coordination (Land resources, forest, agriculture, finance etc.) and commitment of all stakeholders on this should be ensured in the micro plans of communities.
- 3- On the basis of these plans cost benefit analysis based repayment of loan part at community and individual level helpful to repay the loans and established the community fund for sustainable watershed development.

In Uttranchal the watershed directorate implementing a huge world bank supported project but all the financing is grant based as described in this query. We can contribute by initiating this type of planning in some micro watershed if other members' organization/individual interested in this please contact us.

Pranab R Choudhury, Independent Consultant, Bhubaneswar

This is regarding sharing of some experiences on enhancing rights and access on common property/pool land resources (CPR) through legal provisions. Under different revenue laws of Orissa, there are provisions to extend ryoti as well as usufruct (dafayati) rights on some types of CPR lands to landless individuals (including legal landless who owns less than 1 standard acre as per Orissa Revenue Law) and there have been many such instances (e.g. fruit plantations under ERRP/IJRY scheme in 80s and 90s in many districts; land survey development and transfer under Orissa Tribal Development Project implemented in Kshipur Block in Rayagada with assistance from IFAD in 90s etc.) In the ongoing Orissa Tribal Empowerment and Livelihood Project (OTELP - <http://orissagov.nic.in/stsc/otelp>), there is provision of taking up land survey and settlement of rights (on lands including CPRs) before initiating land development works. Of course there have been mixed responses and emergence of many externalities considering the complex dynamics governing land issues in Orissa especially in its impoverished tribal belts.

There is a small group of action researchers involved in analysis of these situations and exploring alternatives to facilitate land rights for tribal and poor in Orissa in general and in area based development projects (e.g watershed) in particular. They have been carrying out intense field studies, conducting policy analysis, facilitating alternate processes in collaboration with watershed projects on the issues of land rights as well as specifically contributing to advocacy initiatives at different levels through different fora. They can be contacted at Land Rights Cell, VASUNDHARA, Bhubaneswar (www.vasundharaorissa.org , vasundharanr@satyam.net.in)

Many thanks to all who contributed to this query!

If you have further information to share on this topic, please send it to Solution Exchange for WES-Net at se-wes@solutionexchange-un.net.in with the subject heading "Re: [se-wes] Query: Watershed Development: Alternative Financing Mechanisms, from German Development Bank, New Delhi (Experiences). Additional Response."

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