

Practitioner Input Form

Submitted: 15/02/2005

Input Record Number	013
Name	<p>Kirtti Bhusan Pani (practitioner – PRADAN, E Singhbhum) Jui Gupta (practitioner and project leader – PRADAN, E Singhbhum) Joe Hill (PhD researcher – UEA, UK)</p> <p>(This document has been completed through interviews with Kirtti and Jui and part 1 is a representation of their views and experiences, combined with the early findings of Joe Hill, conducting fieldwork in three of the seventeen LI areas since September 2004. Part 2 is the opinion of Joe Hill).</p>
Contact Information	kirtibhusanpani@pradan.net , juigupta@rediffmail.com , joe.hill@uea.ac.uk
Organisation(s) Involved	PRADAN (Professional Assistance for Development Action), East Singhbhum Office
Geographic Area	East Singhbhum District, Jharkhand, India
Dates	2000 - Present
Communities Involved	Tribal (Santhal, Bhumij, Gond, and others), and non-tribal (Mahto), and small numbers of other communities.
Duties and Responsibilities/ Purpose of Project	Impacting livelihood (income generation) through women-managed community-based micro-lift irrigation projects (17 facilitated to date).
Context of Intervention	Rural and irrigation: diverse livelihoods, food insecurity, (previously) one rain-fed paddy crop with low agricultural yield, vegetable cultivation by river, undulating topography, perennial streams/rivers, high run-off, frequent drought and 'failure' of rains.

Input Record Number	013 RCS Joe Hill
<p>1) What mechanisms were put into place to ensure access of water for the poor and could they be categorised as financial, technological, social or institutional mechanisms?</p> <p>Community-ownership was seen as the first and most important such mechanism (social). In the past decades to present the Minor Irrigation Department has not consulted the public and combined with inappropriate technology, their projects continue to be unusable and unused. Further, through experience with men-managed lift irrigation projects in previous projects we found many obstacles to effective community ownership (such as women not having a say, money being spent on personal interests, a gradual shift from community to personal assets), and so the women-managed lift irrigation (LI) concept was developed (also social/institutional).</p> <p>PRADAN also forms and works with many women Self Help Groups, and in the seventeen location in which LI projects are running, we introduced the concept/idea of LI to the pre-formed SHG in some cases, while in others we realised the potential for LI in an area, but first formed SHGs and allowed for their growth before discussing the LI. The SHG is important for the purpose of accessing credit, especially regarding agriculture. To access bank loans, one must prove to a bank that one is credit-worthy. SHG is also a useful informal organisation in that it meets weekly for its savings scheme, and we can build in other activities not only directly related to LI itself. Also, for community ownership, we believe that the money for LI (capital cost) as grant from the District Administration should go directly to the SHG bank account, then they can feel the ownership. This also cuts out the ‘middle man’/contractors, notorious in this region for pocketing public funds and doing shoddy work if any. PRADAN has received some payment from at least nine of the seventeen LI projects to date, and this allows the water users to realise that we are working for them, and thus they can demand from us their needs. To convince the District Administration to pay funds for the LI directly into the SHG bank account was a long battle, in which they insisted early on that the SHG would have to pay registration and become a formal organisation (high cost, Rs 4,000). They also tried to encourage us to receive the fund directly. Ultimately we had our way, and grants were paid directly to the SHG (such mechanisms can be termed as institutional, financial and social).</p> <p>The concept of Water User Association (WUA) is used at PRADAN East Singhbhum, but this is rather the institution of the LI itself, as opposed to an actual informal organisation. This has evolved through practical needs. Some hamlets in which we work are small, having only one SHG, while some are larger having two SHGs. In order for the money to be paid into the bank account, the SHG must receive the fund as it can prove its credit rating. The WUA consists of those SHG members that express interest early on in the project and that then proceed to contribute to capital costs and use the water (paying running costs). Non-members may later join the WUA, provided they are SHG members, and the villagers negotiate this themselves, based on the incomers’ non-contribution to labour as part of initial capital cost. The WUA consists of LI water users, and includes an accountant, account book, local pump</p>	

operator, coupon system for quota of water etc. Government projects have been employing operators from outside of villages, leading to numerous problems including non-attendance, lack of ownership and care of the machine, thieving of the engine, and so on, so we have insisted that the operator should be from within the WUA (these mechanisms are institutional, and also social).

The LI from a financial perspective can be seen to have capital cost and running cost. The capital cost comprises of the grant from District Administration (above), and some contribution from the water users; labour contribution in digging for laying pipes etc., and also financial contribution in terms of a fixed payment to be made by each water user per area of land to be irrigated (Rs 250/bigha). These mechanisms ensure the community feels that they have ownership of the scheme. The running cost for LI is the water distribution charge (WDC), including coupon (~23%) and diesel (currently ~77% of WDC). The coupon system is a charge of Rs 4 per fifteen minutes use of the pump-set, and this covers machine and pipe maintenance, and payment to a local machine operator and an accountant. The user must provide the diesel required, and this is a frequently stated constraint to the users given the high and rising cost of diesel in India (the above mechanisms can be termed as financial). A further mechanism utilised is that of 'tank-full' system, whereby the tank is filled to the top after use, thereby always remaining full and ready for use, and removing the issue of calculating diesel use for each use of pump. Thus reducing potential conflict (this is an institutional mechanism, as part of WUA).

Many technological mechanisms have been included in our LI model including: use of a simple centrifugal pump (the type of pump depends on the requirement of the site after a proper survey) driven by an 8 hp diesel engine, thus reducing the capital and running costs of use. Previously the government installed 15-20 hp engines that were expensive. A diesel engine is necessary as villages have no electricity supply. A pump-house is also constructed bearing in mind the history of theft of pump-sets in the vicinity. A 'guarding system' is discussed with the community. Due to the undulating topography, scattered and mainly small land holdings, the outlet system is designed to transport water 500-800 metres in buried PVC pipes with 3-5 outlets. If the command area is small, the diameter of pipe is reduced to cut capital cost. Flexible HDP pipe is also used to join pipes so as to allow branches off the main pipe to reach other farmer's land. Earlier a gate valve outlet was used, but was made of brass costing Rs 2,000 per piece, and many were stolen presumably to be resold for scrap. We developed (in an earlier project) a flange outlet, using initially a frying pan secured by six bolts. Later an iron plate is used, prepared by a company. Now if this is stolen, the cost of replacement is Rs 200.

In terms of selecting hamlets for the lift irrigation, we had to weigh up pros and cons in different villages, and based on a certain threshold level, would either install or not. There was a time constraint and uncertainty factor here (due to funding from the District Administration), and using 'participatory' methods especially group meetings, examination of village revenue map, rough sketching of current land holdings of interested villagers, and inspection of rivers/streams and potential command areas by an experienced practitioner with the villagers, we allowed the community to select the LI site, with our approval. Thus selection of the command area was based on social, technical and financial concerns; e.g. if several of the poorest had land at too high a head for the water to reach, we had to leave them out because running costs would be too high; and vice-versa in other cases to include the poor via increasing running costs

slightly. In approving the LI site, we also felt that there must be some 'social-binding' for the project to succeed, and in a few cases where this was lacking a great deal, we decided against implementation (such mechanisms thus combine the social, technological and financial).

An area saturation approach is also applied in that hamlets neighbouring one another are selected (we actively concentrate on visiting neighbouring hamlets), enabling; villagers to learn from one another; PRADAN to provide a single professional worker for a cluster of villages and thus aiding training, and time spent with villages etc., provision of forward and backward linkages etc.; single bank branches and the respective bank managers to become stakeholders in the project etc. This also allows for group training sessions of accountants and machine operators, minimising costs, and providing a certain measure of sustainability. We have further trained an 'agricultural service provider' (to be paid by the farmers) within each hamlet, to whom we give direct training and exposure to, and who then returns to his/her respective hamlet to ensure the micro practices of agriculture are understood and followed, and to ensure other related linkages are ensured (social and institutional mechanisms).

Once installed, we have held meetings with water users to discuss norms and rules of water use, and this included the signing of a declaration to follow certain rules (as guidelines). Such ideal rules included: a separate box should be set aside for the LI coupon money to be kept in, and this should be used only for maintenance, repair of LI, and for payment of the operator and accountant; receipts should be obtained for expenses; the cost to be set for coupon and its part-wise breakdown –Rs 4 per 15 minutes, with 1/16th for the accountant, 5/16th for the operator, and 5/8th maintenance/repair; that the operator should not start the machine without a coupon, 'tank-full' system etc. (institutional, financial mechanisms). In many LI sites, we have held meetings later on to discuss rules and norms and their evolution.

Obtaining benefits from the scheme is a core aspect for the sustainability of the LI. For this a systematic and continuous effort is planned to go for improved and profitable agriculture. The beneficiaries are given different training and exposure on agricultural technology and management of the whole activity, so that after three to four years they themselves will have enough confidence to remain irrigators. Further, as part of the LI package, we have facilitated access to seeds (through setting up a seed shop with quality inputs), fertilisers, pesticides, and provide training to farmers on agricultural techniques, including various seed varieties, pre-treatment of seeds, spacing of crops and weeding techniques etc. Bearing in mind the shortage of water that occurs in the streams/rivers in the dry season, we recommend certain crops, vegetables, and do not encourage farmers to go for such high water consuming crops as wheat.

2) What were your experiences with implementation and outcomes in regard to these mechanisms?

In relation to community ownership, the LI schemes in East Singhbhum are still in their early stages, becoming operational from 2000 to 2004. In general we have purposely chosen to work in hamlets predominantly 'homogeneous' at the ethnic/caste level, and have found that this aids cooperation amongst the water users and the functioning of the LI/WUA. However, from previous experiences with LI, including older projects dating back fifteen years, we have found that as time passes, those that use the LI more (particularly larger/relatively wealthier farmers) pay more towards the running costs, and may develop a feeling they have more right to the water than other users. This has led to some 'snatching' of the project from the community/SHG. This has not occurred as yet here.

However, within the hamlets, we have found that on some farmers getting good returns for their efforts, the use of LI water has increased, and may spread to other farmers. We have found that in many cases the larger land holders/relatively wealthier farmers irrigate more, perhaps due to their financial ability to experiment and risk failure. Some poorer farmers have also been keen users of the LI and have been willing to take risks, while others have been put off by a one-off failure of crops, or on hearing stories of other farmer's losses. Whether or not the poorest families are agriculturalists it influences their interest in the scheme, and if they have for many years worked in wage labour, and are used to migration etc., then it has been difficult for us to involve them in the scheme. Take up of agriculture amongst different communities also varies (in a general sense), and this is related to the level of agriculture they are and have been used to. In general there is a perception, whether this is true or not, and always the case or not, is another matter – that Santhalis and Oraons settled in agriculture before Mundas, Hos and Primitive Tribes (different tribal groups within the region), and so the former take to irrigation more easily and faster. Further, in many villages in which we work, the farmers have never had the facility of irrigation, especially for land at distances from the riverside, and so this has been a new experience for them. These farmers are also predominantly subsistence farmers, and to convince them of the benefits of growing crops for the market is also an aim.

In terms of the women-managed aspect of the LI, we have found that the idea of mixing women SHGs and WUAs has succeeded in some cases and been less effective in others. Certainly this has provided the women some respect in the community for they themselves through their credit saving have accessed funds directly from the government to their own bank account, something the men have not ever done. So there is (to a certain degree) an increase in the status of the women: In this region in which women traditionally have very few assets, ownership of such an asset as an LI is quite impressive. On a day-to-day basis though it is often the men that can be seen to be making decisions, operating the machine and checking the accounts etc. It will be useful for us to examine from a female perspective intra-household and intra-community dynamics surrounding the women's role in the LI schemes.

In facilitating the direct transfer of project funds to the SHG, we have succeeded in forming a direct link between the District Administration and the public, while removing the taking of bribes/percentage, and the role for the 'contractor'. This has been a very positive step, in a region where such activities are everyday and taken for granted, and in which shoddy half-finished ruins of structures can

be seen from almost wherever one stands. For the villagers' consciences, for our own, and for the Government officials involved personally, these projects have demonstrated that work can be done without entailing corruption, and have allowed us all to realise that the system can work well and for the people. Further, through involving local banks, we have also demonstrated that villagers can access and use such financial institutions. Before our intervention, the majority of SHG members had never been to, or used, bank facilities.

Our experience with SHGs and WUAs has been a varied one. In smaller or more close-knit hamlets in which there is only one SHG covering nearly all the households, and in which land holdings are such that the majority of farmers land can be covered in the command area of LI, we have had almost overlapping membership of the WUA institution, and very successful outcomes in terms of running and functioning of LI WUA, and participation in the community. Even in such cases however, there are several families that choose not to be involved, and this has been for varied reasons. We can say that we have had a mixed participation though, ranging from families ranking in relative wealth, from poor through to the relatively wealthier. Other such smaller close-knit hamlets having two SHGs covering the one WUA/LI are also functioning well, though the institution of LI/WUA seems to be affected to a certain degree. This may be the result of several factors: only one SHG can receive the grant to its bank account, and this may be the SHG that has the better credit rating, often constituted from the relatively wealthier section of the hamlet that are able to save more money on a regular basis; the SHG weekly meetings are held at different places often at the same time, and this has resulted in there being no forum/weekly meeting in which the WUA members/water users sit together. The WUA institution in such cases can be effected such that: there is no running total kept in the accounts book; on questioning water users are unaware of how much money they have saved for repair/maintenance; a small problem such as bad quality fuel being put in the tank can lead to a machine being shut down for several months etc.

In larger hamlets, where there is no natural centre/public space where people regularly congregate, where all farmers land cannot possibly be covered under the command area of the LI, and where there are two SHGs, but not covering all of the hamlet's households, the WUA institution is found to be the weakest. Such hamlets may also have 'weaker' SHGs and be found to have very high rates of illiteracy (especially female illiteracy) and high levels of ill health and disease. In such hamlets, unless extra support has been given to aid the functioning of the LI WUA institution, we have found that: the coupon system is not strictly followed, or not used at all; farmers using LI water have no idea as to what the purpose of the coupon system is, or to where the coupon money goes, nor do they appear to care; water distribution charges in terms of coupon price has varied erratically; accounting is not undertaken; all water users have not paid their share of the initial capital cost, in terms of labour contribution and in cash (per area of land irrigated). In one case the members of one SHG contributed all the labour and money up front, while the second SHG has to date contributed nothing while its members are using water. Thus it can be understood that the LI WUA is best suited for smaller and more 'homogeneous' hamlets/groups, and that for it to run effectively elsewhere, serious time and attention must be given to the water users.

We should note also that in forming WUA from SHG members only, other farmers having land inside the LI command area are excluded from the scheme.

For this the WUA may allow such farmers to take water and to pay a higher cost. There appears to have been no cases of conflict surrounding such issues in the short lifetime of these schemes.

As mentioned in the above paragraphs, we have had mixed results regarding the social and institutional mechanisms put in place, such as WUA and its accountant, the coupon register/accounts book, the operator etc. We have found that the (relatively) wealthier families will often be in control/possession of the accounts register and the coupons, and this has been the decision of the community itself at the onset of the programme. It would perhaps be unnatural for a 'weaker' household within the community to have been encouraged to do this work, and had we insisted, this may have caused problems. Thus it can be seen that this LI scheme itself has not been used by us to try to directly, head-on, address issues of social inequality within the hamlets, but rather at a more subtle level. We have tried to provide water for irrigation to all the farmers in a fair manner, minimising exclusion. Our focus has been to provide irrigation facilities to farmers that have never had such facilities before, to get them to use water, both to supplement rain-fed agriculture on 'failure' of rains and to take at least a second 'cash' crop in the winter and summer seasons, and to enable them to make sufficient income through use of LI water, that they will continue to use it, increase their use of it, and improve their use of it.

We have found that using a local operator works very well, and most often found that after our initial training of one local operator for each site (and in most cases an assistant) the operator sometimes informally train an additional local person, so that there will always be a community member available in the hamlet to supply water when needed, and that the water users will know where to find this person. In some of the better functioning WUA institutions, an 'operator's book' is kept in the pump-house, which tallies the total time the machine has been running, allowing the operators to keep an eye on when exactly the machine requires servicing, to remain at its optimum. In other cases, there is no such record. In terms of maintenance on a more daily basis, this again varies according to the particular individual operating the machine. Those trained and in general more attentive, will check the machine's water, fixtures, oil etc. regularly, while others may simply turn the machine on and off.

Again as mentioned above, the financial mechanisms including capital and running costs have worked to varying degrees of success, depending on the location and on local social (and power) relations that include the particular organisational mindset of the community involved. Some hamlets/ethnic groups seem to be naturally more organised, and in such places it is found that everyone has paid their dues, and are following quite strictly the systems put in place. Those hamlets that are found to be generally more poorly organised, in regards to accessing other resources, such as education, health, road tenders, electricity, and so on, are found to be weaker in terms of paying for water (capital and running costs), keeping accounts etc.

A further observation from the field shows that in purchasing diesel, there has been no initiative from the SHG, WUA or any 'entrepreneur' to buy the diesel on loan or advance in bulk, and then to keep it within the hamlet, ready for any would-be water users. Rather as individuals or as groups of two to three users, a person will cycle about 10-12 km to buy a small volume of diesel (1-6 litres), then cycle back (taking 1.5 hours minimum). This leads to instances where farmers will then delay irrigation based on another mans failure to cycle for fuel.

The price of diesel may be a factor that constrains the formation of such an institution, but the time-savings it could entail could be worthwhile. Further and in relation to the price of diesel, in terms of accessing water we have found that the poorest farmers cannot (or believe they cannot) afford the diesel charges, and we have tried to address this through SHG savings and loans, and developing links with the banks and facilitating loans, while discussing with SHGs and water users in training meetings about basic economics: starting costs needed, costs throughout and returns to cover expenses and profit.

Technological mechanisms put in place have been found on the whole to be successful. However, we are currently considering using a different pump, the 'China pump', for its capital costs are lower. It has a diesel gear system allowing reduced fuel consumption in certain situations, and being light in weight it will be mobile. We estimate its running costs will be half of the present system. Through construction of pump-houses there have been no cases of theft of machine, and the flange valve developed has been successful with low cost and no cases of theft. There have been some problems with the fixed position of outlets, though this is less a technological issue, but rather one of social dynamics. The community themselves have selected sites for outlets, in consultation with us, but it is found that in some LI sites, certain outlets have been unused, and in others outlets may be positioned in advantageous positions for more dominant members of the local community, and at fairly long distances from the 'weaker' farmer's land. There is also an added problem that in cases where a non-WUA member's land is located in-between an outlet and a member's land the potential water user has been unable to gain permission to carve out his/her (temporary) open mud channel to convey water to the land. This is also a fairly serious limitation in the *Kharif* season, when nearly all of the fields are covered in paddy. Some farmers are unwilling to give up land down one side of the field for another to take water to their land. We have also to date seen little cooperation of farmers to irrigate groups of fields in one go. At the same time, with the (apparently) obvious benefits that this would entail, such as saving of money and time, and working in unison with the natural topography and drainage of the land.

The rules and norms we discussed with the WUA/SHGs at the onset of the programmes have been followed, adapted/evolved and ignored in varying combinations. Water rights come in a variety of forms, and it can be seen that some users obtain water having not contributed to the capital costs, either in labour or cash, while in other LI schemes, persons excluded in the early stages, may not be able to obtain water later on. Such rights to water can be seen to stem from local social (and political) networks/relationships that are complex for outsiders to understand. In terms of running costs, coupons are bought on a first come first served basis in some LI WUAs, while in others they are not bought at all, rather simply water is obtained by first purchasing diesel and then approaching the machine operator. Such institutions as the coupon system can be seen to have different values and meanings amongst the different tribes/cultural groups, with some understanding the importance, while others simply find the idea pointless. In the two villages in which this study is being conducted, three hamlets are covered by three separate LI schemes, and within such a small geographical area, it can be found that for example five languages are spoken by different tribes: the Santhals speaking Santhali and Bengali, the Oraons speaking Hindi, the Bhumiji speaking Bhumij and the Gonds speaking Oriya. Each tribe have different cultural and belief systems, based on their own personal and family's oral history, and evolving influenced by their varied

relationships with nature, village spirits, organised faith systems (Hindu and Christian), their own tribe or faith's network beyond the village, and neighbouring tribal and non-tribal groups and individuals, with the market and the associated pressures of earning money for purchasing essentials, education, accessing health care etc., and with the State, both as a concept and in its real manifestation in terms of political power games, promises and expectations, entrenched corruption and exploitation, lies and failures.

Other water rights are found to evolve themselves and in various ways. For example, one LI WUA has a rule that in the dry season, when the water level in the stream is very low, and hence only limited water can be pumped in any one day, the right to take water works on a rotational basis, the farmer who sowed his crop first is getting the first turn, followed by the second, and so on. Such rights will be examined in more detail in the coming dry season, and it will be interesting to see whether water is actually delivered in accordance with such allocations, or if social and political relationships will interfere, resulting in fairer or more unequal outcomes. Further, examining how some farmers will take water at the same time, to minimise costs and conveyance losses, is a further research need as this may enable much more effective agriculture. Also, other forms of cooperation among water users must be examined, such as participation in the construction of stone and mud dams to check water flow in the perennial streams/rivers. Certain villagers participate, while others do not, and the quality of such structures vary. The villagers here have developed many techniques themselves for harvesting and storing water, an example being, in one hamlet there is a dam constructed of stone and mud, with reeds embedded for increasing its strength, 200 metres downstream from the LI inlet. A second dam is constructed a fair distance upstream (between 300 and 800 metres). Later in the dry season, when water at the LI inlet becomes insufficient for irrigation, the second dam is opened, allowing water to travel downstream to be checked again by the first dam, increasing the water level in the stream by the inlet and thus allowing irrigation of crops to continue for longer.

Land rights are also an issue tied to irrigated agriculture and this is predominantly a matter of historical legacy, with little land sold in the region due to regulations outlawing the selling of tribal land to non-tribal. Land distribution is thus mainly based on the lineage line of any tribe and depending on within that lineage how many brothers one has, and how many brothers one's father has/had etc., a certain farmer is left with his own land. There is a sense of luck in this really, the most unfortunate farmers (in terms of land) coming from that section of the lineage line, having the largest (growth of) male population. This also varies again depending on whether family members work outside of the village, and do not rely on farming. However, in most cases it is seen that farmers do have some land, and where not under the LI command area, they can in general use another (often larger) land holder's land for cultivation outside of the *kharif* season, without having to pay a charge.

3) What criteria were used to measure success and failure?

The importance given to criteria varies amongst team members, but all share the opinion that such criteria generally fall under three categories:

- 1) Use of the scheme by household, and benefit in financial terms, i.e. profit.
- 2) Access to water and control of LI within the community/SHG.

- 3) Command area utilisation, in terms of crop coverage in the two seasons.

This has been our weakness to date. While focussing our attention on all the above mechanisms, in continuing our ongoing support to SHG's credit schemes, in providing agricultural training and linkages etc. to farmers/water users, and in creating other livelihood activities for women such as poultry etc., all the while expending to cover new areas and begin new projects, our small team has not seriously been assessing the success and/or failure of the LI schemes in any systematic and rigorous manner.

- 4) What factors do you see as crucial in the implementation of pro-poor water interventions in connection with the specific characteristics of your experience?

In a general sense, it is crucial that the organisation remains flexible, open to new ideas and supportive of the community in terms of their wants and needs. As indicated above, we are considering in future the facilitation and procurement by farmers of smaller more portable engines, to improve the delivery of water to the land of those that may otherwise be excluded, and to reduce capital and running costs and schemes. It is also necessary that we continue to offer agricultural training to the farmers, and support them in experimenting with different crops in different seasons. We must further encourage and aid farmers to use supplementary irrigation in the *kharif* season and when rains 'fail', to ensure that their paddy yield is at its maximum. In a region of such high food insecurity in terms of grains and vegetables, this is most important. In fact, the villager's diet is very poor from a nutritional perspective, and so we should ensure the farmers are growing a sensible mixture of crops that can be eaten at home, and also sold in the market. Timing and market linkages are also necessary to get right, and it is too often occurring incidence that after much hard work in the growing of certain 'cash crop' vegetables, market prices are so low the products are hardly worth selling, leading to losses by these new irrigators. Many other such issues surrounding irrigated agriculture are vital to address, and this is a time consuming and tricky affair. For example, irrigation is related to crop water requirements, and choice of crops will be related to land availability, wheat cannot be profitably grown on small patches of land etc.

In the case of the current system of LI as outlined above, the most crucial matter it seems is dedicating more time to the institution of WUA in LI, particularly in the relatively 'weaker' hamlets in which we work. While we remain flexible to alternative forms of the LI WUA institution, for after all it is the community's scheme, there must be certain rules that the villagers should adopt, such as some form of savings (in the line of the coupon system) for the maintenance and repair of the machine. Factors that are crucial then, for successful and pro-poor water interventions in the context of this LI scheme, are social and institutional, related to ownership and sustainability. Further, we must look carefully at the poorest within communities, to find out the reasons as to why some do not participate, as for example, it may come down to the family not having a pair of bullocks. Further issues that should be researched include issues of water distribution charges for the poorest, and issues related to the decision-making surrounding allocation of water, and actual distribution of water within the command area.

Practitioner Input – Part II

Input Record Number	013II Joe Hill
9)	In development.
10.	In development.
11)	<p>From the perspective of Joe Hill, PhD student: An understanding of conceptual theories located within legal anthropology, social and cultural anthropology, actor-orientated perspectives and the critiques of participatory research methods. Fairly long-term research in a compact area, using anthropological techniques (such as family trees, observation), mixed with some limited and specific participatory techniques (for entry points, but also to understand social relations when compared with individual viewpoints), and command area mapping, inspection of fields and canals, calculations of water flows (to be compared with perceptions of water users) etc. One must understand the people and become accepted by them, and this is effectively achieved through living with them, being able to communicate with them, caring for them (in situations of complete absence of health facilities, this includes gaining an understanding of illnesses and in certain cases linking villagers to health facilities).</p>
12)	<p>Research must be accessible to practitioners, and should realistically guide them in a practical manner as to how they can themselves utilise certain research techniques in their respective working areas, to collect information on social relations etc. Thus research should be presented in a clear and jargon-free matter, with a sufficient explanation of relevant theory and research methods. Only when practitioners can themselves conduct research through the guidance of specialists will they be able to collect meaningful data for their own team in its own specific location. Only then can pro-poor interventions really be secured, i.e. the huge gap between cutting-edge international development research and actual practice in remote locations lacking infrastructure must somehow be bridged.</p>
13)	<p>Satpathy, Manas Kumar (2001) 'Irrigation for Livelihoods Improvement: Small-Holder Tribal Irrigation in Jharkhand', IMWI, Anand.</p>