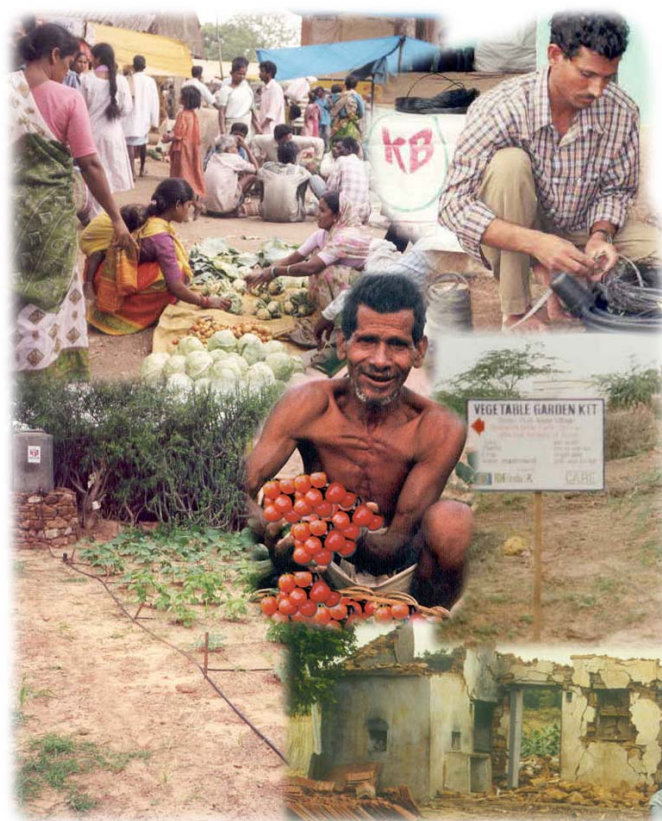




IDE (INDIA)



Documentation of IDE-CARE Micro Irrigation Project Kutch, Gujarat



For
International Development Enterprises (INDIA)

*C-5/43, Safdarjung Development Area, New Delhi,
Tel: 011 696 9812/13, E-mail: mailbox@ide-india.org*

**Dr.M.S.Nagaraja
S.C.Rajshekar**



Symbiotec Research Associates

**C-6-C, Gangotri Enclave, Alaknanda, New Delhi
Tel: 011-621-0633 Email: sra@sraual.com**

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1.0 Background

In the wake of the devastating earthquake that struck Kutch region of Gujarat, CARE (India) funded International Development Enterprises, India to carry out a rehabilitation project in Bachau and Rapar blocks in Kutch, Gujarat.

Under the project IDE agreed to introduce Micro-irrigation Vegetable Garden Kits (MI Kits) to 1200 individual beneficiaries in selected villages of Bhachau and Rapar blocks. The project consisted of two phases. The first was a phase to demonstrate the low cost, vegetable garden micro irrigation kits in 30 locations in the area and the second was to disseminate the technology among 1170 farmers in selected villages.

This project supported by CARE (India) as one of the projects under its Livelihood Restoration Projects in Kutch, ended on March 31, 2002.

This study was conducted to document the process that was adopted by IDE in disseminating the kits and the roles, perceptions and expectations of various stakeholders.

2.0 Methodology

SRA carried out a series of in-depth interviews with the following stakeholders to understand their roles, and assess their expectations from the project and their perceptions regarding the process adopted:

Sl. No.	Name
1.	Ms.Shivani Manaktala IDE(India), New Delhi
2.	Mr.Mihir Sahana IDE(India) New Delhi
3.	Mr.Depinder Kapur CARE (India), New Delhi
4.	Mr.Sunil IDE(India), Ahmedabad
5.	Mr.Biradar IDE(India), Kutch
6.	Mr.Bhupesh Patel IDE(India), Kutch
7.	Mr.Jayendra Rathore CARE (India), Kutch
8.	Mr.Nand Kishore CARE (India), Kutch
9.	Ms.Vandana and Ms.Afroze, CARE (India), Kutch

10.	Mr.Gangaram Distributor for IDE
11.	Mr.R. Jha Agronomist, IDE, India (Spoke over telephone only since, he could not meet us at Gandhidham
12.	Users Khengarpar
13.	Users Saranvand
14.	Users Nilpar
15.	Users Moti Chirai

4 villages were selected for carrying out the study after consultations with Mr.Rathore of CARE India and Mr.Sunil and Mr.Biradar of IDE. The sample was chosen to ensure that both, villages that had contributed to the Village Fund and those that had not contributed were represented. (See Annexe 3)

In every village, in-depth interviews and visits to the MI plots of the selected users were carried out before having a group discussion with the users in the village. This process helped us in gaining a first hand knowledge of the field realities before carrying out the group discussions. Field visits and in-depth interviews at the farms or houses of the users helped us in interacting with the women and children (this turned out to be the segment that was actively involved in using the MI Kits most!!), who invariably would not attend village meetings.

3.0 CARE-IDE MI Project in a Nutshell

As mentioned above, the project was mainly to introduce MI kits for vegetable growers in Bhachau and Rapar blocks in Kutch, Gujarat in the aftermath of the earthquake. CARE India supported the project as a part of its Livelihood Restoration Project. The programme was implemented in two phases; demonstration and dissemination. The details are as under:

List of proposed activity

	Activity	Process
Phase – I : Demonstration of vegetable kits in 30 farms		
1.	Procurement of 1200 MI kits	IDE would prepare ready to use 1200 kits containing seeds, manure, small implements, sprayer along with Micro Irrigation systems
2.	Transportation to the project area	IDE would handover 1200 MI kits to CARE office in Bhachau
3.	Selection of beneficiaries	CARE would prepare the list of 30 beneficiaries for field demonstration
4.	Demonstration of vegetable garden kits in 30 farms	IDE would install 30 demonstration kits and give training on land preparation; installation and usage of MI kits. (spread over Bhachau, Anjar and Rapar blocks)
5.	Training of farmers on usage and maintenance of the kits	IDE would train beneficiaries on the usage and maintenance of MI system and other agricultural equipments
Phase – II: Dissemination of the MI kits in 1170 farms		
1.	Selection of beneficiaries	IDE would select the beneficiaries with the assistance of CARE based on the technical evaluation criteria
2.	Installation of vegetable garden kits	IDE would collect the kits from CARE campus in Bhachau and install. All physical field activities viz. Land preparation, fencing, MI installation are done by beneficiaries.
3.	Training of farmer beneficiaries	IDE technical team would carryout mass training programmes and also individuals (if required) in installation, usage and maintenance of MI kits and other agricultural implements
4.	Sensitizing the NGO partners	IDE will motivate the local NGOs in the area to encourage its usage
5.	Follow-up visits and monitoring	IDE Field team will monitor the usage of MI kits
6.	Documentation	The process of beneficiary identification, training, installation, field performance, use of kits and benefits will be documented by IDE

3.1 What is a Micro-irrigation Vegetable Garden Kit (MI Kit)?

Various models of Micro-Irrigation systems, suitable for different purposes, have been designed and developed by IDE. This MI Kit is one of the packages designed exclusively for the Kutch Region to grow



vegetables in an area of 100 m² (10m X 10m). The kits were distributed to the beneficiaries as 'Agricultural Equipment Package' under the Gujarat Earthquake Rehabilitation Programme. As a package, the MI Kit included micro-irrigation systems, seed material, manure, eco-friendly organic pesticides (neem and karanj) and basic agricultural equipments. A manual in Gujarati was also provided giving details of how to install the MI system and handle the agricultural equipments. Simple and self-explanatory illustrations were used to aid easy understanding.

Contents of MI Kits

Micro-Irrigation systems	Concrete Tank for water storage, Micro irrigation System (includes LLDPE tubes -Mains, laterals, micro tubes-and filter, joints etc) for water distribution
Vegetable kit (For one season only)	Vegetable Seeds namely Brinjal (3-5 gm); Chilli (2-3 gm), Tomato (2-3 gm), Bhendi (25 gm), bottle guard (10 gm), Guar (25 gm), Bitter guard (10 gm) and Loki (10gm) + 5 kg Manure + 50 ml of Bio-pesticide (of Neem and Karanj oil) + seed tray filling mixture
Implements/ Equipments	Spade, Sickle, Sprayer, seed tray
Others	Plastic Bucket, Metal sheet tray + Users Guide / Manual (in Gujarati language)

4.0 Project Implementation

Installation of 1200 MI kits was carried out in two phases namely Demonstration (in 30 beneficiary farms) and Dissemination (for 1170 individuals). The methodology adopted in the process is presented in this section.

The field office of IDE (India) based in Gandhidham, Kutch was directly responsible for implementing the project. The field team headed by Mr. Biradar consisted of 4-5 field staff. The field office was supported by the Regional Office based in Ahmedabad which in turn reported to the head office in New Delhi. Coordination between CARE and IDE was largely through their offices located at New Delhi.

4.1 Phase I: Identification of beneficiaries

Fourteen villages were identified initially by CARE based on their earlier experience in the Shelter Project (housing). A list of 30 beneficiaries was prepared by CARE and handed over to IDE for demonstration of MI kits. These beneficiaries were chosen based on the technical evaluation criteria developed by IDE and are given below.

- Availability of water
- Land availability and proximity to farmhouse
- Interest of farmers and market access

4.2 Phase I: Demonstration of MI Kits

IDE completed this phase by the end of June, 2001. The identified beneficiaries were met individually by the IDE staff and detailed about the micro-irrigation package and its benefits. Land preparation (100 Sq.m) was carried out by the beneficiary under the guidance and supervision of IDE. They were trained on MI installation, use of the MI Kits, water and agronomical management practices and maintenance of the MI system. Periodic visits were also made to these demonstration plots and the benefits derived from the MI Kit were shown to non-beneficiaries also. List of other interested individuals was also prepared during this period as a step for the second phase of the project.

4.3 Phase II: Selection of beneficiaries

Phase II was to have started soon after the completion of Phase I. However, there was a delay of nearly 6 months. This considerably diluted the impact of Phase I. Indeed, Phase II could begin only by late November.

Based on the list of interested farmers generated during Phase I and in consultation with CARE field staff based at Bhachau, villages and beneficiaries were short listed by IDE for Phase II. All short listed beneficiaries were met with to ascertain if they satisfied the technical evaluation criteria mentioned in the preceding section. Based on their evaluation, a final list

of beneficiaries was prepared. In all 11 villages and 1170 beneficiaries were selected. List of villages is given in Annexe 1 along with no. of beneficiaries.

During Phase II, at the specific suggestion of Mr. Rick Hennings of CARE India, New Delhi, it was decided to try and collect a token contribution of about Rs.50-100 from each beneficiary towards the cost of the MI Kit. This amount was to be left with the villagers in the form of a Village Fund. Accordingly, meetings were held in all the selected villages to explain activities under Phase II and also explain the purpose of the contribution. In all villages, but one, IDE field staff managed to convince the beneficiaries to make the contribution. Indeed, this must have been the only instance of contribution by the beneficiary in the aftermath of the earthquake!!

4.4 Delivery of Kits

Soon after the villages and the beneficiaries were identified, delivery of the MI Kits started from the first week of December. All components of the kits were sourced from Ahmedabad and came well packaged. Cement concrete drums for storing water was sourced locally to avoid high costs of transportation and also damage during transit.

4.5 Installation of Kits

Each beneficiary was instructed to choose a 10m X 10m plot and prepare it well. They were trained in making raised beds for sowing the vegetable seeds. Once the plots were prepared, the IDE staff installed kits.

In many a case, to meet the deadline of completing the project, the staff have themselves wielded the spade and the pickaxe to prepare the plots! In fact, they camped in every village for about a week to complete the installations.

Beginning in the first week of December, 2001 the installations continued till the last week of March, 2002. In Nilpar, where the first of the installation took place, the villagers advised the staff that December was not suitable for sowing vegetable seeds since germination under severe cold was likely to be a problem. However, given the time bound nature of the project and the considerable delay that had already occurred between Phase I and Phase II, the kits were installed against the advice. In fact, when we visited the village, very few beneficiaries reported a good harvest from the December sowings.

4.6 Training & Follow up

Meetings were organised in every village where Mr. R.Jha, Agronomist, IDE India, answered questions raised by the beneficiaries. He also spoke about the following:

- Farm management: How to apportion land to various crops so that risks are lowered from crop failures
- Termite control
- Rat control
- Pest control
- Use of pesticides and fertilisers

These meetings usually lasted for about 45-60 minutes and was carried out in the last week of March, after all the installations were completed.

In addition, the field staff themselves guided and trained the beneficiaries in the use of the MI Kit, its maintenance, use of the manure and the organic pesticides, etc. In fact, most of the beneficiaries that we met could explain how to clean the filter, or how to clear the micro tubes if they were clogged, etc. They could even mention that the organic pesticide was to be sprayed once when the plant was 3-4 inches tall and again when it was at the flowering stage.

All follow up carried out by the staff was purely ad hoc. No records of the visits or the observations of the staff and the beneficiaries were recorded, although, the field staff knew the details very well.

4.7 Documentation & Reporting

Monthly reports were generated by the Field Office at Gandhidham and sent to IDE, New Delhi through its Ahmedabad office. These reports mentioned how many kits were installed and how many were in actual use. The focus of the reports was monitoring the activities and not measuring the impact of the project.

5.0 Observations

The purpose of this study is to document the process adopted by IDE in dissemination of MI Kits. However, we are recording our observations also since a mere recording of the

activities would not do justice to the efforts put by the field staff and the beneficiaries themselves. If some of the observations are evaluative, we hope that we would be excused in light of their usefulness. Here are our observations:

5.1 Are people interested in the MI technology?

It is our observation that people have shown great interest in trying out the technology. The involvement of the users with the technology is evident when one sees the whole family, especially the women and children toiling hard in the scorching summer heat to fill the drum with water. The following indicate interest in the technology:

- **Presence of the MI kits in the field, intact and properly installed**
 - Of the four villages that we visited, only in Moti Chirai, were the MI Kits not even installed. The beneficiaries mentioned that they would install only in the courtyards of their new homes after they were completed.
 - In the rest of the villages, irrespective of the usage status of the kits, they were all found intact and properly installed.
 - In fact, even in Saranvand, where acute scarcity of water and severe damage to the tubes by rats was seen, none of the kits were removed from the sites. From our discussions with the villagers, it was apparent that they were interested in using the kits but had no clue on how to contain rat damage.

- **Continued presence of the MI kits even after one harvest**
 - In almost all the places where the kits had been used for growing one crop, the second one was underway.
 - Gua Punja from Nilpar, has a large wadi with adequate supply of water. But he has maintained the MI kit very well and has planted a second crop already. He showed us around and proudly told us that he could grow a lot of vegetables with very little water.

- **Special care of the MI Kits**
 - Hari Theja Manvar of Khengarpar village has a tube well to irrigate his 10 acre wadi. But for filling the drum of the MI kit, he uses water only from a sweet water well that is about 250m away instead of the slightly saline water available from the tube well.

- Dhara Hira of the same village, keeps the drums properly covered with gunnysacks to prevent them from cracking. He says it also keeps the water in the drum cool

- **Use of own seeds**
 - Many of the users used their own seeds for the first crop, instead of using the seeds given in the package.
 - All the users have purchased their seeds on their own for sowing the second crop and have not waited for IDE staff to give them seeds free again.
 - These two instances indicate the confidence of the users in the technology

- **Changes in irrigation schedule**
 - Both Hari Lakhan Dhilu and Dhara Hira of Khengarpar village reported that they were filling the drum more than four times to overcome the bad effects of the hot wind that blows across Kutch during summer months (also called “loo”)
 - Arjan Versi of Nilpar and Hira Dalla of Saranvand reported that they resorted to flooding and filling trenches along the rows to counter the effect of “loo”
 - Both these indicate that users are making genuine attempts to use the technology without taking too much of a risk.

- **Involvement of women and children**
 - In almost all the places, irrespective of whether the MI kit was at a wadi or in the courtyard of a house in the village, it was women and children who took responsibility to fill the drum.
 - Hari Theja Manvar’s wife jocularly complained that, the MI Kit was good but then she had to fetch water from the sweet water well
 - Javerghar Bhimghar Gosai’s wife with a baby still suckling and her four children fetch water from a well that is 400 m away in a neighbour’s wadi to grow vegetables in their small home garden

5.2 Are they using it properly?

Most of the users knew how to use and maintain the kits. In every installation that we saw, we checked the filter and found it clean. Given the short duration in which the kits were all installed, the field staff has done a good job of training the users.

However, in many of the plots we could see that they had been flood irrigated. This was especially so in the wadis. On asking they mentioned that they were doing this to counter the ill effects of “loo” that was sweeping Kutch. They assured us that they would revert to using the MI kit once conditions were more suitable.

The situation is understandable, since a summer crop of vegetables is always risky in Kutch and experimenting with a new technology like micro irrigation would appear risky. Indeed, the attempt to flood irrigate to counter the ill-effects of “loo” and planning to revert to micro irrigation is indicative of genuine attempts to use it with out taking too much of a risk.

It is our opinion that the following could enhance the effectiveness of the MI Kits:

- Using a good mulch out locally available resources such as fallen leaves, straw, etc., would help in better moisture conservation and would also add organic matter to the soil, which is lacking in soils of Kutch
- Mulching is in fact, very essential given the porous nature of the soil. Indeed, micro irrigation without a good mulch may not be very effective in Kutch during summers.
- Instead of using raised beds for sowing vegetable seeds, it may be better to form small basins in the wetting zone of the micro tube and sow the seeds there.
- The soil characteristics of the small basin may even be altered, if necessary by adding humus, which soils in Kutch usually lack.
- It is also cheaper to treat small basins to counter salinity, if necessary
- In case hot winds are expected to prevail during and just after germination, it may be better to sow seeds in trays kept under shade and transplant when conditions are better

5.3 Has it reached people that would benefit the most?

In Kutch agricultural lands are of two types, those that are rain fed and those that have an assured source of water, usually an open well or a tube well. Ownership of a well means agricultural prosperity. A farm with a well is called a “wadi”. Usually, the farmer and his family live on the farm. Wadis are usually at a distance from the main village while rain fed plots are closer.

MI Kits were found installed at both wadis and non-wadis. At wadis it was a curious sight to see water flowing freely in open channels to reach the far ends of the large land holdings

(usually about 10-15 acres), but a set of family members also toiling to fill up the drum with water fetched in pots. It is difficult to say, based on the limited use that has occurred so far, if wadi farmers would find the MI Kits useful.

However, from discussions that we had with non-wadi users, the usefulness is apparent. Javerghar Bhimgar Gosai, his wife and his 5 children live on a small piece of land that the villagers of Khengarpar have given them. Gosai is the priest in a small temple situated on the piece of land. His family leads a hand to mouth existence. The Mi Kit has been a Godsend. Now, says Gosai's wife, she can feed her children with fresh vegetables and in fact, save about Rs.10-15 everyday that she earlier spent on buying vegetables. Vegetables in Kutch are quite expensive and do not form a part of every meal. Unfortunately, for her, the neighbour's well has run dry and as a result so has her crop of cluster beans (guar)!

In Saranvand, despite the early setback suffered from severe rat damage to the MI kits, people are very keen to use them. Both men and women who participated in the meeting saw clearly that they could eat fresh vegetables everyday and save money too!

In the meeting it was suggested that some of the kits could be shifted closer home so that a better watch could be kept on it and in view of severe scarcity of water, a few creepers could be planted around the house and irrigated using only one lateral from the MI kit. Both the users and the IDE staff readily accepted this suggestion.

Overall, a significant no. of MI kits have been installed at wadis, where its usefulness is not yet certain. On the other hand, considerable efforts have been made by the field staff to install at non-wadis, where its use is limited by availability of water!

It is our opinion that given the short time and the target based approach of the project, the field staff has done a fairly good job of convincing wadi farmers to use the MI kits and have spared no efforts in motivating non-wadi users too.

5.4 Have users benefited?

As mentioned in the previous section, users have all benefited by having access to fresh vegetables. However, the income (or savings on expenditure on vegetables) impact has been felt and reported most in the case of non-wadi users.

On the other hand wadi users reported that they found that they could grow more vegetables with lesser quantity of water. Most had no idea of how much water actually they were saving, but said that it could be at least 50%.

Surprisingly, no one reported that they were making an additional income by selling vegetables. In fact, everyone mentioned that no one sold vegetables to their neighbours in their villages and would prefer to give it away free. In addition, given the quantity of daily harvests and the distance of the nearest markets, people did not find it useful to sell and instead preferred to consume themselves or give away to others. Indeed, this opens up a question about whether “access to markets” was a valid criterion to select beneficiaries.

5.5 IDE’s role and performance

IDE being the field implementer had a major role to play in the success of this project. The following are the observations:

Performance of field staff

- Selection of local people as field staff helped a lot in building rapport with the villagers. This was vital for a short duration project.
- Field staff of IDE has done a commendable job in identifying beneficiaries, installing the MI kits, training them and motivating them to use the kits.
- Indeed, the rapport that they have established with the users was apparent during our interactions. Even in Nilpar village where the villagers had refused to contribute towards the “Village Fund” following confusion on whether it was a “contribution” or “commission”, the rapport and the affection was evident.
- The quality of material and installation was uniformly good at all the locations visited by us.

Rapport at the field level

- Good rapport exists at the field level, but is highly personalised and is not yet institutionalised. Hardly, any of the beneficiaries know that the MI kits are being provided by IDE. Most of them call the IDE field staff “bakaluwalo” (vegetable fellows).
- In fact, no attempt has been made to project IDE in the field.

Contributions to Village Funds

- Collection of contributions and formation of “Village Funds”, an afterthought in the project was handled very well by the field team and deserves kudos! In fact, in the face of all sorts of material help being delivered free of cost to the earthquake victims, it is commendable that a contribution towards the cost of a device that is totally new to the user could be collected.

Delay in start of Phase II

- A long delay between Demonstration (Phase I) and Dissemination (Phase II) meant that the full benefits of Phase I could not be harnessed.
- The long delay also meant introduction of MI Kits under Phase II during December, a wrong time for sowing vegetable seeds in Kutch. This led to crop failure among the early users.
- The unexpected delay also meant that seeds given as a part of the package were not appropriate for the season of sowing. In many cases IDE staff changed them.
- The delay resulted in installations being completed only by the end of March 2002, leaving no time for proper follow-up

Project management issues

- The time bound nature of the project hampered proper assessment of the beneficiaries before selecting them
- Conceptually and in implementation the project management has focused on installing the MI Kits as an end in itself. Delivering MI kits to beneficiaries (a product orientation) was very much on top of the minds of the field staff. Our observation is that in introduction of MI technology, delivery of the hardware is just the first step and the process does not certainly end with it. Indeed, MI is more a concept to be understood than a mere product to be delivered.
- The MIS has also reinforced this target orientation in the field staff by just monitoring no. of installation without requiring them to report on follow-ups made or processes adopted to increase usage or motivation to use.
- Indeed, even at the field office level, the MIS has reports only on village-wise lists of beneficiaries with no other details.
- This is clearly a drawback in the system that it does not reflect the efforts and knowledge gained by the field staff about the users.
- A project approach to introduction of MI kits has led to a very short horizon of thinking and planning leading to decisions with an eye entirely on short term consequences.

Coordination

- Coordination and reporting between IDE and CARE was largely limited to New Delhi. At the ground level, while personal rapport was quite among the field staff, roles and expectations were not clear.
- No one from CARE, Bhachau (the office closest to the project area) was sure that he/she was responsible to collect information about the progress of the MI project. In fact, Ms.Vandana and Ms.Afroze, during our meeting with them said that they did collect information on the project, but only when special needs arose or when they visited some of the villages on other matters. In short, they did not monitor the project or report on it on a regular basis
- In fact, perhaps of all the projects that CARE is implementing in Kutch, the MI project was the only one that was not covered under the MIS that Mr.Rathore's office was using.
- A process of joint review by CARE and IDE at the field level would have been useful.

6.0 Lessons learned

Some of the key learnings from this project that could be of use in introducing MI Kits elsewhere are listed here:

- Micro irrigation is more a package of practices, than mere delivery of hardware. Any approach to introducing it must provide for sufficient time to follow-up with users
- Timing of introduction of the MI Kits is important. Crop failure due to reasons such as poor germination due to wrong sowing time or improper choice of variety could lead to users losing faith in the technology itself.
- Benefits from using MI Kits cannot be easily perceived through demonstration of the kits at village meetings. Only on using the kits for a crop season or two does the impact become clear. Until then constant follow-up is needed to keep the users motivated to use the kits
- For maximising the effectiveness of the kits, a sound package of practices that takes into account local conditions must be imparted to the users. For example, in Kutch, "loo" in summer is a problem. This could be countered by a set of agronomic practices along with use of MI kits instead of resorting to flooding
- Introduction of new technologies during moments of crises may be tactically a good move since resistance to change is also low.

- An MIS that encourages the field staff to monitor and report on the usage of the MI Kits is essential in the initial stages of the introduction of the Kits in a new area to ensure sound follow-up after installation of the kits.

7.0 Conclusion

Introduction of a new technology such as drip, which is more a concept than a mere product in relief and rehabilitation situation is very interesting. In a time bound project of this nature, it could have led to dumping of products on disinterested beneficiaries. But hard work at the field level has ensured a reasonable level of use.

It is our considered view that in situations such as the one IDE encountered in Kutch, low cost micro irrigation technologies have a major role to play in view of the following:

- Being a simple technology it can be easily understood and adopted by the people
- Accompanied by an agricultural package, the MI kit gets the farmers to doing what they know best – farming, thus enhancing his feeling of well being
- In areas where water is scarce, the MI technology would prove beneficial in the long run. Introducing it at moments of crisis may be tactically a good move since resistance to change is also fairly low.
- However, unless MI technology is accompanied by good and sound agronomic practices, the benefits may not be substantial.

Annexe – I: Number of MI kits distributed and installed

Sl. No.	Village	Number of Beneficiaries	Number of MI kits	
			Distributed	Installed
1	Nilpar	16	16	16
2	Vajepar	64	64	64
3	Saranvand	90	90	90
4	Khengarpar	198	198	198
5	Vanoi-Vandh	80	80	80
6	Moti Chirai	166	166	22
7	Dabundha	87	87	87
8	Makhel	90	90	90
9	Lakhapar	130	130	100
10	Kotada	202	202	145
11	Kharoi	47	47	0
	Total	1170	1170	892

(Source: IDE India, New Delhi)

Annexure – II : Village-wise agronomy training programmes

Sl. No.	Village	Date	# of Beneficiaries
1	Vanai-Vandh	23 rd March, 2002	59
2	Khengarpar	23 rd March, 2002	119
3	Saranwand	24 rd March, 2002	75
4	Vajepar	24 th March, 2002	55
5	Kotada	25 th March, 2002	175
6	Lakhapar	25 th March, 2002	80

Annexure – III: Field Observations on MI- Kits

Village - 1

Name of the Village	Khengarpar
Individual beneficiaries met	Mr. Hari Theja Manavar, Mr. Dhara Hira, Mr. Narayana Bhani Manavar, Mrs. Javerghar Bhimagar Gosai, Mr. Hari Lakhana Dhilu and others
Other processes	Group discussions; Village Meetings
Field Observations	<ul style="list-style-type: none"> ➤ Farmers had installed MI kits and practicing high irrigations in <i>Wadies</i> – 2 to 4 tank fillings per day; trench filling; water sprinkling ➤ Beneficiaries either consumed or distributed the vegetables and did not sell in the market ➤ Onion and other vegetable crops were introduced ➤ Family level participation (both children and women) were recorded in village complex while it was lower in <i>Wadies</i>
Villagers opinion	<ul style="list-style-type: none"> ➤ Able to get fresh vegetables and save Rs. 10 to 15 per day during the growing season.



Remarks

- People are aware of dwindling water resources and its scarcity
- People feel that water saving technology is important but not confident on yield (production) during the summer season
- There is scope for MI- technology for horticultural crops and trees

Village - 2

Name of the Village	Saranvand
Individual beneficiaries met	Mr. Poopat Dahi, Mr. Devji Bhima, Mr. Lakshman Phoopat, Mr. Kaji Villa, Mr. Bijar Vastha and others
Other processes	Group discussions; Village Meetings
Field Observations	<ul style="list-style-type: none"> ➤ Farmers had installed MI kits and seeds were sown. ➤ MI systems installed near to the village complex got damaged by rats ➤ In Wadies, farmers had practiced flood/ furrow irrigation along with MI system ➤ Family participation was very high (women and children

	<p>discussed several issues related to MI kits) in village complex where the residents are poor and most of them were working as labourers (agricultural and salt industries)</p> <ul style="list-style-type: none">➤ Only one open well is present in the village at a distance of about 500 mtrs and at scarcity times the water is supplied by tankers
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<p>Villagers opinion</p>	<ul style="list-style-type: none"> ➤ Summer should not have been the season for MI technology ➤ Rats damaged the MI system to get water present in the micro-tubes ➤ The MI kit helps in getting fresh vegetables for self consumption and it can save Rs. 10-15 per day to a family
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<p>Remarks</p>	
<ul style="list-style-type: none"> ➤ Villagers staying in the main complex are mostly poor and they have more importance for the kit as it provides fresh vegetables and saves more money. Family participation, including women and children, was very high in this village 	

Village - 3

<p>Name of the Village</p>	<p>Nilpar</p>
<p>Individual beneficiaries met</p>	<p>Mr. Arjan Parabat, Mr. Arjan Versi, Gua Punja, Veera Punja, Devji Amra and others</p>

Other processes	Group discussions; Village Meetings
Field Observations	<ul style="list-style-type: none"> ➤ All beneficiaries had not contributed to the villager fund and confusion prevailed on the issue of Commission v/s contribution (Misunderstanding among villagers, IDE and CARE field staffs) ➤ MI kits were installed and adopted other irrigation practices along with MI systems (in most cases) ➤ Beneficiaries were confident of the technology and hesitant to put in more efforts and hence, flood irrigation was provided
Villagers opinion	<ul style="list-style-type: none"> ➤ MI kit is a good package and helps in saving water and controls weeds.
 	
<p>Remarks</p> <ul style="list-style-type: none"> ➤ Initially, people had accepted to contribute towards the village fund. Confusion was set in among villagers whether the collection is a contribution or commission. During the village meeting, people however, agreed to contribute to the village fund. 	

Village - 4

Name of the Village	Moti Chirai
Beneficiaries met	Discussion with woman individuals
Other processes	Nil
Field Observations	<ul style="list-style-type: none"> ➤ Most of the farmers had not installed MI kits and some of the villagers were using concrete tanks for water storage purposes ➤ Acute water shortage in parts of the village and minimal water supply was met through mobile tankers. Thus, the installed kits were not used. ➤ Our discussion with the villagers revealed that the system would be installed in a new location, where new houses are under construction, immediately after shifting
Villagers opinion	<ul style="list-style-type: none"> ➤ MI kits would be Installed after shifting to new location
Remarks	
<ul style="list-style-type: none"> ➤ Family participation was less (too difficult to comment on this) ➤ Land less labourers were more interested to install the kit at home kitchen garden 	

Annexe IV : Tour dairy of Dr.M.S.Nagaraja and S.C. Rajshekar

Date	Time (hrs)	Name of the person/persons contacted	Organization and Place	Purpose
26 th April, 2002	13.00	Mr. Sunil, Mr. Biradar and Mr. Bhoopesh	IDE	Reached Bhuj and received by IDE Field staff.
	14.30	Mr. Jayendra Rathore, Manager Rehabilitation	CARE Office at Bhuj	To get a feedback on the project handling, performance and their perceptions
	16.45	Mr. Nanda Kishore	CARE Office at Anjar	To get a feedback on the project performance
	18.30	Mr. Sunil, Mr. Biradar and Mr. Bhoopesh	IDE Office at Gandhidham	To discuss on the project handling – Methodology adopted in demonstration and dissemination, MI kits, Materials, Plan and Mode of action
27 th April, 2002	9.30	Mr. Hari Theja Manavar	Khengarpar – Wadi	Field visit and farmer's perception
	10.30	Mr. Dhara Hira	Khengarpar – Wadi	Field visit and farmer's perception
	12.00	Mr. Narayana Bhani Manuvar	Khengarpar – Wadi	Field visit and farmer's perception
	12.45	??	Khengarpar – Wadi	Field visit and farmer's perception
	14.30	Mrs. Javerghar Bhimagar Gosai	Khengarpar – Landless labour on lease	Field visit and farmer's perception

28 th April, 2002	16.00	Mr. Hari Lakhan Dhilu	Khengarpar - Village	Field visit and farmer's perception
	17.30	Many villagers	Khengarpar - Village	Village Meeting to know acceptance – what and why? field performance, next plans for MI, Utilization of village fund
	10.30 to 11.30	Mr. Poopat Dahi, Mr. Devji Bhima, Mr. Lakshman Phoopat, Mr. Kaji Villa, Mr. Bijar Vastha	Saranvand – village	To visit farms and to discuss with villagers on damages to MI system by rodents, dogs etc
	11.45	Village Meetings where both men and women participated	Saranvand – village	To discuss about the problems faced, reasons for not utilizing, plans for future, economic benefits from the package
	13.00	Mr. Biradar and Mr. Bhupesh	IDE Staff	Discussion on future plans, solving rat problems, to build confidence among farmers
	14.15	Mr. Hira Dalla	Saranvand - Wadi	Field visit and farmer's perception
	14.45	Another beneficiary and his family (Lands are split, still stay together)	Saranvand- Wadi	Field visit and farmer's perception
	15.30	Mr. Ram Bijal Koli	Saranvand - Wadi	Field visit and farmer's perception
	16.30	Miss Vandana and Other person	CARE Office at Bhachau	To discuss about the interaction of CARE with IDE and project monitoring
	29 th April, 02	9.00	Mr. M. Gangaram	Distributor for MI system

				micro irrigation systems in Kutch region. Important crops potentially available for MI systems.
	11.00	Mr. Arjan Parabat	Nilpar – Wadi	Field visit and farmer's perception
	11.15	Mr. Arjan Versi	Nilpar - Wadi	Field visit and farmer's perception
	11.45	Farmer - 3	Nilpar - Wadi	Field visit and farmer's perception
	12.30	Gua Punja	Nilpar – Wadi	Field visit and farmer's perception
	12.30	Veera Punja	Nilpar - Wadi	Field visit and farmer's perception
	14.00	Devji Amra	Nilpar - Wadi	Field visit and farmer's perception
	14.30	Group of Farmers for Village Meeting	Nilpar	To discuss about MI kits, Contribution to Village Fund
	16.00	Mr. Shivuba Jadeja and Group of farmers at two different locations	Moti Chirai	To know why the systems are not installed
	17.00	Mr. Ramesh Maheshwara	Moti Chirai	To see the installation and discuss, farmer was not there
30 th April, 2002	9.30	Mr. Sunil and Mr. Biradar	IDE, Gandhidham	Briefed about our discussions and clarified some of the doubts
	11.45	Mr. Rathore	CARE Office, Bhuj	To brief our observations and clarify few issues which were initially asked
	13.00	Left to Bombay		