

Poverty Reduction Evaluation

Using a simple systems approach

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This evaluation may be of interest to the following:

- Poverty reduction practitioners and scholars
- Systems thinkers : causal loop diagrams for poverty reduction
- PRA enthusiasts
- Institutional analysis practitioners and scholars
- Evaluation aspirants

Overview

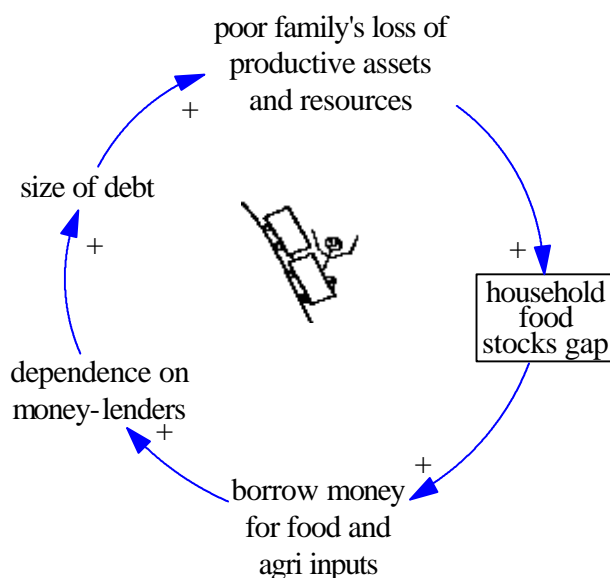
This is a true story of poor people refusing to remain poor. People who have built upon hope instead of feeling helpless in apathy. It is told as a result of an evaluation that uses several ideas. One idea is the use of systems thinking in development work: i.e. thinking in circles and feedback loops. E.g. change in part A of the system causes change in part B of the system which in turn causes change in part A. Systems generate information as feedback. In this evaluation, the people involved in creating this feedback are the poor in four villages in U.P. India. Sustainable projects are self-adaptive systems that can take action to align activities to their purpose in response to feedback on an ongoing basis. A related idea is "participation". Participation of the poor not only as providers of information but as actors in a system in which they the poor can take corrective action to align activities to goals. These people are members of self-help groups and have the power to act on many issues affecting them through their institutions. Yet another idea is that information needs to be good quality and accessible. Two PRA tools, social maps and seasonality diagrams, were used to generate information. This information being visible to many people in the village was subject to immediate validation on the spot.

The evaluation looks at the vulnerability of poor households. Is a family going to slide from being poor to being destitute and a state of apathy? Or is this family going to climb towards making some surplus every year and have hope? An enquiry process is undertaken at the household level to find answers to three questions: How many months of food shortages? Where is the labour-energy of this household used? How critical is access to credit? Another enquiry process is done at the village level to determine the number of households that are engaged in activities that will help them to move away from poverty, which in this study, means assessing engagement with low-input agriculture and non-farm opportunities for the landless.

Introduction

The poor suffer because the resources that make up their livelihood are subject to deterioration from many causes. Please have a quick look at all the seasonality diagrams. All of these families, in the past, suffered periods of shortage of food. All of them did not have enough labour opportunity. Some periods were especially bad, like those when food stocks were low and they could not sell labour. This forced them to take credit. When there was opportunity to sell labour but low food stocks, they had to take credit to buy food to provide the basic energy to work. The grain harvest that they produced from their land lasted only a few months because one part of the harvest, sometimes substantial, had to go to repayment of credit. And the cycle repeated itself every year. Some of the poor, when their claims to credit become exhausted begin to sell their assets. First, go the chickens, followed by goats.

Poverty : levers pushing towards destitution



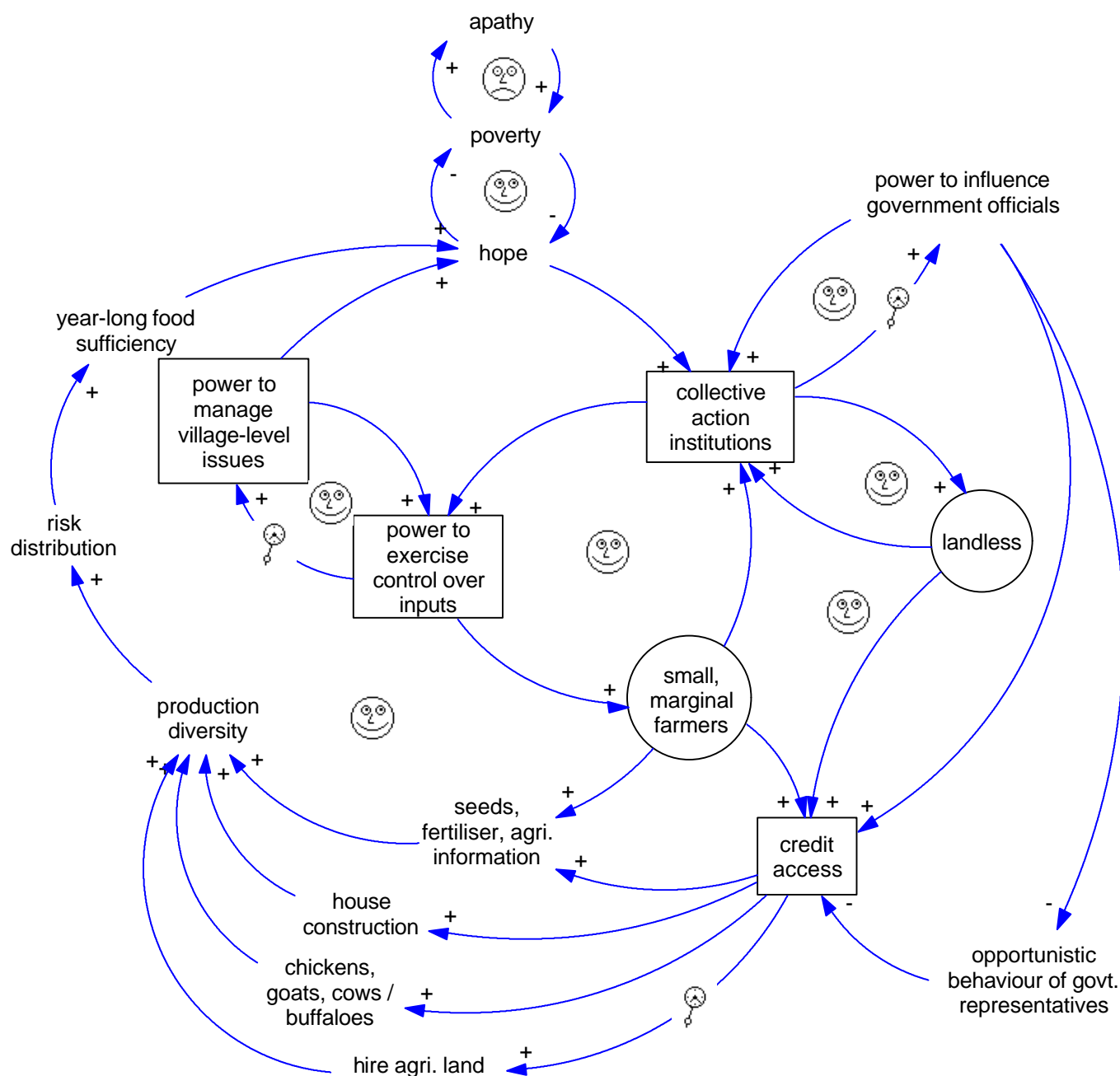
Both chickens and goats provide small amounts of ready cash for cash-poor families. Next, go household assets. Mortgaging of land and family members follow. Until there is nothing left.

Agriculture, which is dependent on high external input, demands more and more inputs for less and less returns. It is like a truck going down hill without a driver... an out-of-control downward spiral. Unless some structural change is done in the livelihood, a poor family moves from being poor to being destitute and desperate.

How to help a poor family? The principles related to energy can be used here: conserve,

recycle, route to the best use, reduce entropy. The first issue that needs attention is access to food throughout the year. This means that the poor family needs help in securing all the agriculture inputs that are required to make sure that whatever land they own, has been put to productive use, under their own control. Low cost credit can provide the support that is needed. In addition, they need access to small amounts of money for needs apart from food. Small stock (chicken, sheep, and goats, rabbits, pigs) functions as sources of cash through eggs and sale of young. The poor need access to labour opportunity especially in times of food shortage. They have to be helped to respect their own expertise, both in livelihood survival as well as in customary associational life. Most persons living in rural areas have personal knowledge of traditional institutions. This knowledge needs to be brought to the fore to help people to come together in effective group work. The crafting of institutions to manage benefits for small groups lays the foundation for building larger events of collective action. Self-governing collective action creates the power for the poor to start changing some of the systems that affect them.

Increase Hope Tactic by GEAG, U.P. India to Help the Poor



Gorakhpur Environmental Action Group (GEAG) is a NGO in U.P. India. One reading of this structural diagram is as follows. Poverty builds apathy. Hope reduces poverty. Hope is built when small / marginal farmers invest in collective action institutions like self-help groups (SHGs). Such institutions create group power to produce and sell agricultural inputs between members like seeds, fertilisers, and pesticides. The experience of having some control over inputs is fed into managing other village-level issues like water, education or health. Successful experience of managing inputs and village level issues creates hope that things can and do get better. This in turn creates more incentives for investing in collective action institutions for larger issues like influencing government representatives related with formal credit. Access to formal credit for substantial borrowing (based on reliability of repayment enforced by SHGs) creates a virtuous cycle of asset building (see smileys in diagram). The clock icon on some links means that time is needed for the effect to happen at the arrowhead. When there are no seasonal food gaps, resources can be devoted to building assets. (See seasonality analysis attached: compare all cases with the control family to prove the logic of this diagram.) : Joseph, S. 2005

Fieldwork Findings

The figures in the tables that follow have been generated by the community in response to different questions. A visual tool called a social map was used. Community members, (mostly women) answered questions like “who is using the ASCs?” (ASC=Agro Service Centre) by placing seeds in each of the houses that were using the ASCs. All the items in the tables below were answered in a similar way.

Effect of GEAG's work on the poor

Building Associational Capabilities:

The poor when alone are powerless. When helped to come together in group activity they develop the power to do things with others. Self-governing groups develop the ability to deal with authority both within their membership as well as outside. Except for Dudhai village, all the other villages have at least 50% of the households involved in self-help groups.



Women and Men Together: Evaluating change using a village map drawn by them.

Becoming Less Poor: The perception in all 4 communities was that people have become less poor in 3 years. Aligarh felt that 50% of its people were still poor (older women without husbands felt that they became really poor when their husbands died) while the other 3 villages felt that about 25% or less were still poor.



Detail of map: houses with seeds inside them help in counting families that have adopted low input agriculture

Using bio-fertilisers: In Kataiya about 67% while in Aligarh about 75%. In both villages, half of these are non-SHG members. From this, it can be inferred that there is a spread effect taking place on its own.

Using ASCs: Aligarh has 65% using the ASCs, Kataiya has 48%, and Amkol has 36%. Considering that Amkol has 50% landless, this translates the ASC users to more than 70% of the total households.

Helping the landless: In Amkol, about 90% of the landless have been helped. Of these almost 40% have been able to undertake substantial loans for hiring agricultural land (Rehan); and to start keeping buffaloes and cows.

Effect of model farmer: On Dudhai, more than 40% households are using some of the strategies that the model farmer is using.

Evaluation of changes for the poor by 4 rural poor villages in north-western U.P., India

Campierganj	Village Aligarh		
	SHG	Non SHG	Total
Number of houses	52	51	103
Number of SHGs	5		
Number of members	not	Asked	
Poverty profile			
No. of poor 3 years ago	16	22	38
No. of poor at present	7	14	21
Greening Acceptance			
1 activity	6	33	39
2 activities	8	6	14
3 activities	14 -		14
4 activities and above	8 -		8
Greening totals	36	39	75
links with ASC	34	31	65

Village Kataiya			
	SHG	Non SHG	Total
	48	53	101
	6		
	67		
	33	41	74
	8	9	17
	7	18	25
	14	7	11
	17	5	22
	8	1	9
	36	31	67
	26	22	48

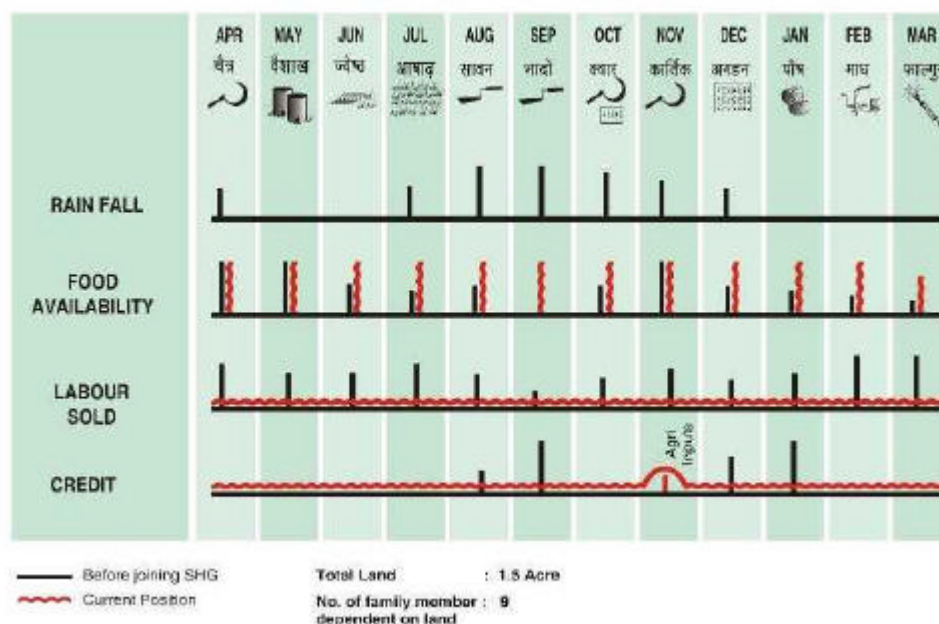
Sardarnagar	Village Dudhai		
	SHG	Non SHG	Total
Number of houses	69	127	196
Number of SHGs	10		
Number of members	102		
Federation members	12		
Poverty profile			
No. of poor 3 years ago			88
No. of poor at present			23
Effect of model farmer			80

Sardarnagar	Village Amkol		
	SHG	Non SHG	Total
Number of houses		65	36
Number of SHGs		9	
Number of members	Not asked		
Federation members	Not asked		
Poverty profile			
No. of poor 3 years ago			89
No. of poor at present			26
Greening Acceptance			
1 activity		5	
2 activities		21	
3 activities		25	
4 activities and above			
Greening totals		51	
links to ASC			36
Landless IGP			
Rehan farming		10	
Piggery		6	
Cow husbandry		4	
Goat keeping		9	
Buffalo husbandry		8	
Total		37	
total landless		46	
Other farmers using greening			17

Seasonality Diagrams to understand changes in poverty status

Poverty case 1 : From desperation to food/fuel sufficiency in 8 years

Smt. Prebhawati Devi, Vill : Dodhai, Sardarnagar



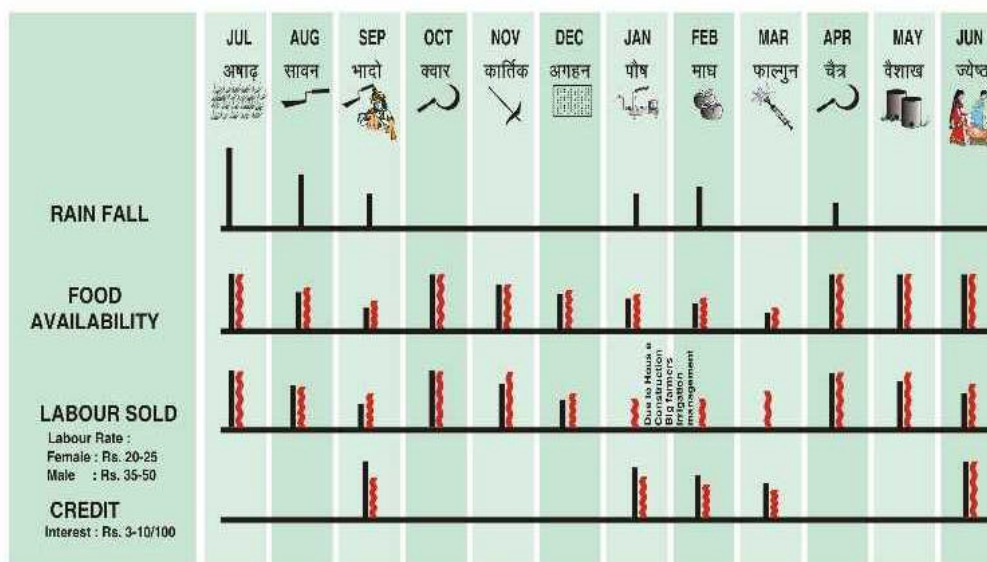
This is an analysis of one household using the tool of seasonality analysis. The black lines represent a situation 8 years ago when this woman was not part of the self-help group (SHG). The red lines represent the current status in Oct 2004. This chart is a more stylised version of the original which was done on a brown paper with pictures representing months so that those that are not literate can also associate the word being said with a seasonal activity and therefore recall other issues in that period. The bars were originally equally sized sticks, which were broken off to represent differences in the availability of each variable. The largest bar in each row represents the largest amount available. Smaller bars represent proportion in relation to the biggest bar.

Eight years ago, there were hunger periods. Sufficient food was available for only 3 months, with severe problems in Sept. (Bhadon) when there was nothing in the house. March also had severe shortages. In fact, there were only 3 months when there was sufficient food. The rest of the 9 months presented problems of varying degrees. With such shortages, the labour of the family had to be sold to others in order to survive. However, labour opportunity was available only for 4 months and that too at a time when the family needed to tend to their own field. Due to desperation, the strategy adopted was to sell labour to others and to attend to their own production needs at the last. This meant that neither planting nor harvest was possible at optimum times. This had a direct effect on lowering yields. Borrowing for both consumption and agricultural inputs was necessary. Repayments removed the available surplus in the household.

Eight years ago, this woman joined the SHG. She learnt how to make her own fertiliser, and to create diversity on her farm. Slowly her needs of food, fuel, agricultural inputs and other needs began to be met from her farm. Through the SHG she was able to access good quality seeds and bio-pesticides produced by other members. The SHG also enabled her to access bank loans. Today (look at the wavy bars), she has no lack of food, throughout the year. She does not sell labour as the farm absorbs it all, and she takes credit for productive purposes from the SHG or the bank. This little farm of 1.5 acres supports 9 persons, providing food, fruits, fuel, fertilisers, and vegetables. The vegetables are harvested in small batches every few days. This provides the ready cash needed for other household needs.

Poverty Case 2 : Control Family profile in non-SHG area as comparison Vulnerability and Poverty Profile of Two Poor Farmers

Sri Ramakant & Sri Muneeb, Vill : Karmaha, Sardarnagar



Sri. Muneeb

Area : 1 acre

Fertilizers : Urea : 75 Kg. - Rs. 390/-
DAP : 25-30 Kg. Rs. 275-330
Zinc : 3 Kg - Rs. 75/-

Seed : Wheat/Paddy : 60 Kg. Rs. 780/-

Insecticides : Furadan : 2 Kg. Rs. 55/-

Rabi
Kharif
Zaid

Production

Paddy : 14 Qtls/acre
Wheat : 11 Qtls /acre

Sri. Ramakant

Area : 1.5 acre

Fertilizers : Urea : 108 Kg. - Rs. 585
DAP : 40-45 Kg. Rs. 350-450
Zinc : 4.5 Kg - Rs. 113/-

Seed : Wheat/Paddy : 90 Kg. Rs. 1170/-

Insecticides : Furadan : 5 Kg. Rs. 140/-

Rabi
Kharif
Zaid

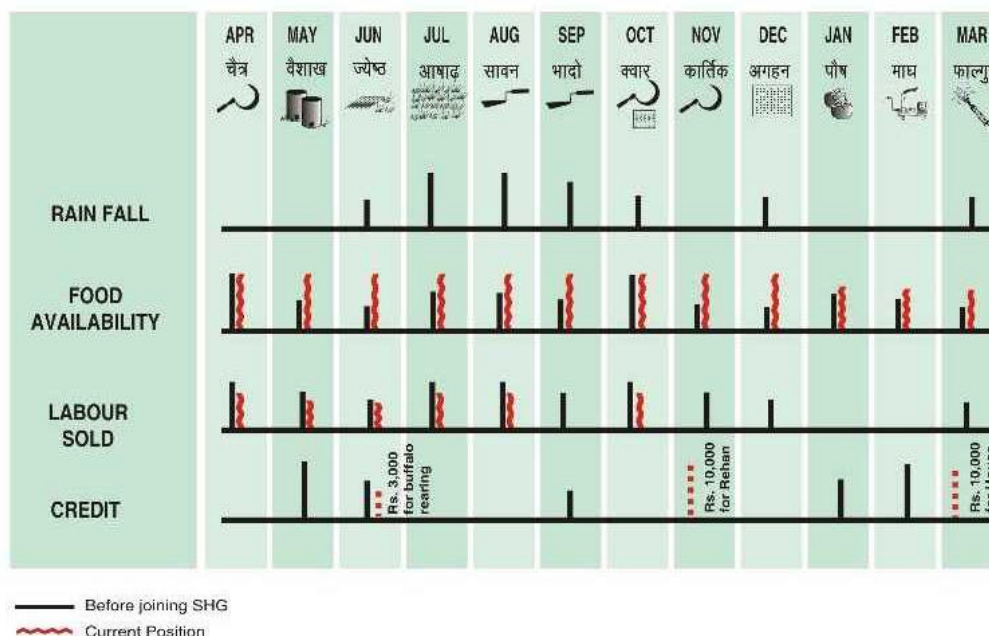
Production

Paddy : 21 Qtls/1.5 acre
Wheat : 16 Qtls /1.5 acre

This is a common picture of poverty. Food sufficiency is available for 5 months while the rest of the 7 months have problems related to food. Notice the desperate situation in Sept (Bhadon) and March (Phalgun). Little food and not enough work. The only option is to borrow. But. That which is borrowed has to be returned... with interest. This means that a part of each harvest and labour earnings go towards meeting the interest portion of the credit. There is no true surplus. Food and money needed for the livelihood system are being forced out of the system leaving an increasing deficit every year. Notice the tragedy. There is more work available now in the months of Jan, Feb, and Mar, compared to 3 years ago. Yet the periods of lack for both food and work opportunity continue. Dependence on credit continues. The situation has not changed much in three years. As the deficit increases with each passing year, family assets will need to be sold. The 1 acre supports 6 persons while the 1.5 acre support 8. They are locked into annual expenditures for inputs involving cash, which in June force more borrowing. They are not able to borrow from banks because officials demand 10-20% commission for loan approvals. The future is bleak with no way of breaking out of a vicious cycle headed towards destitution.

Poverty Case 3 : Landless family, from hunger periods 3 years ago to agricultural land access against lease payment now

Smt. Subhawati Devi, Vill : Aamkol, Tola : Harijan Basti, Block : Sardarnagar



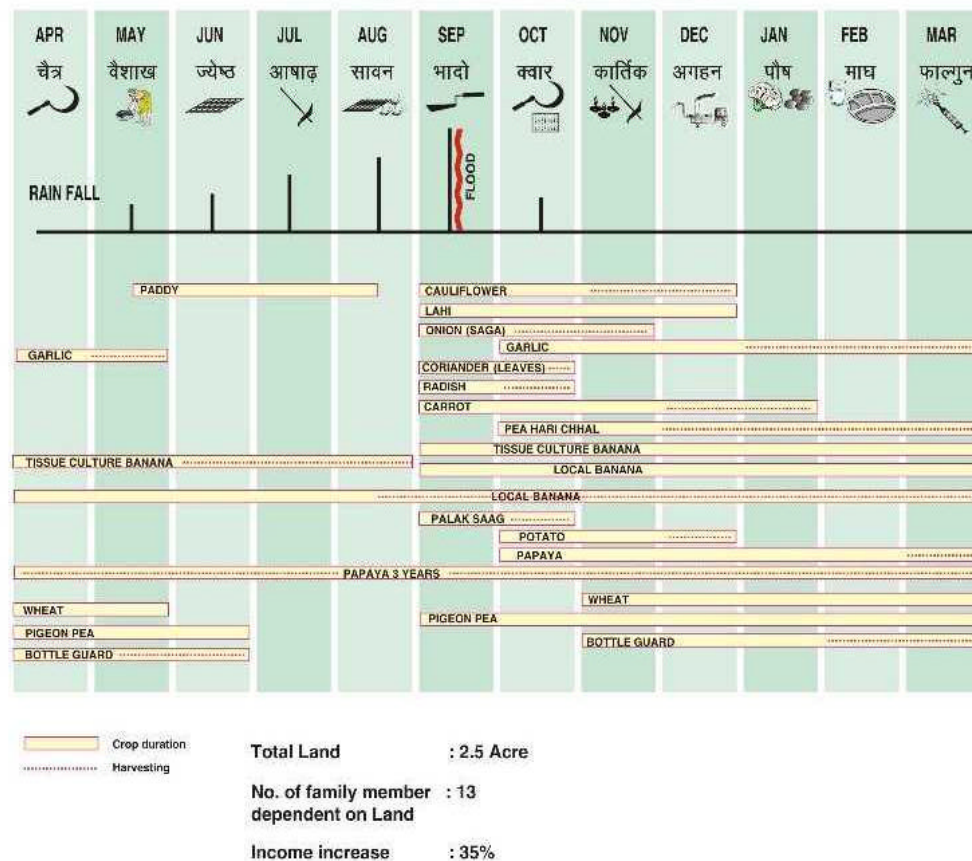
This is a landless family. They live in a Harijan (a group subject to social exclusion) locality. Three years ago they had food sufficiency for two months and had adequate labour opportunity for four months. The rest of the year was a struggle between food shortage and insufficient labour sales. They had no assets of their own. They were forced to borrow for consumption for 5 months. In three years through the membership of the SHG, the picture has changed. There is sufficient food all the year round. Shortages are met from family resources. The husband now sells his labour to add to the family income for some months. They do not borrow for consumption anymore. All credit goes for productive use. Notice the amounts of credit that they have accessed and are now planning. Rs. 10,000/- taken and repaid; Rs. 10,000/- for land lease; and another Rs.3000/- for a buffalo. Today they have pigs, goats, and a buffalo, acquired through credit links made possible by the SHG. They have almost repaid a Rs. 10,000/- loan taken for house repairs/extension, which is a brick-and-mortar house from the government for the poorest. This repayment makes it possible for them to plan to take further loans.

The most dramatic change is that they have the ability to take agricultural land from bigger landowners on "rehan" or lease. This is not sharecropping or entitlements for gleanings. This is full user-rights with all the rights to use the land as they fit for the period agreed. Notice the wavy lines for food.

Compare this with the control farmers who with their own land are not able to fill their food gaps for the year. In contrast, this landless family has plans to increase their incomes. They have something, which the poor need. Hope. Not just a dream but real hope based on real achievements.

Poverty Case 4 : Designing safety nets for flood vulnerability

Sri. Ghanshyam, Vill : Thakur Nagar, Campierganj

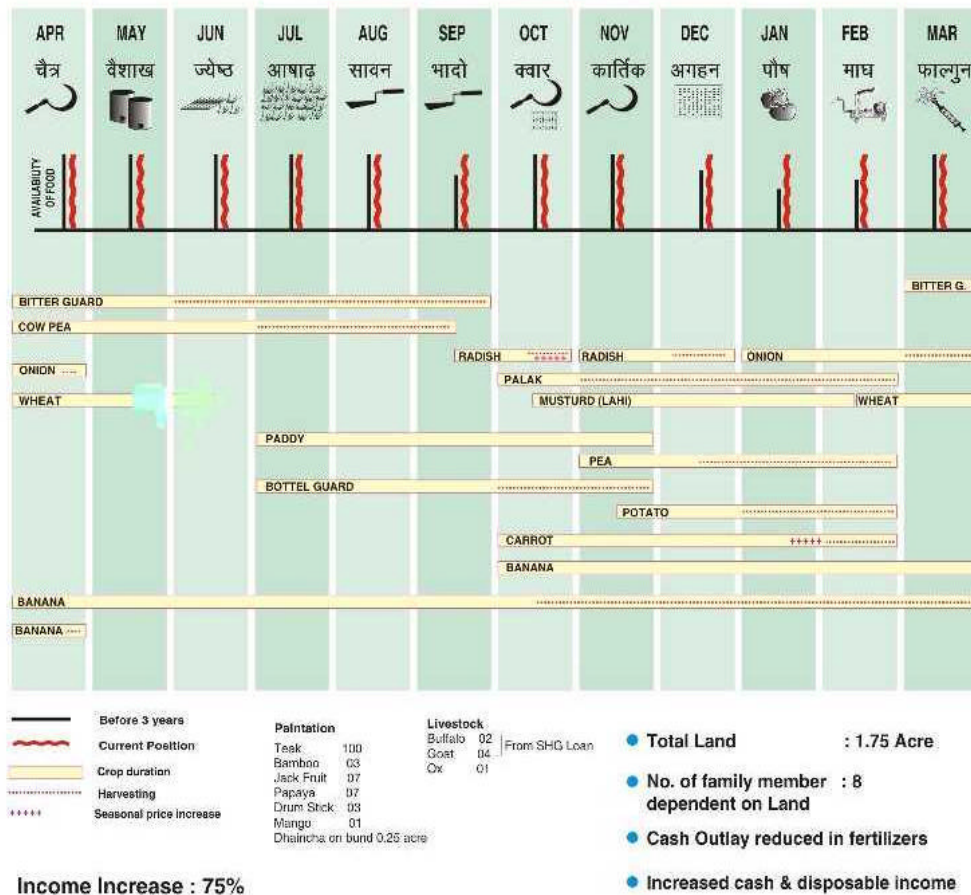


There are some villages, which are next to the river. Whenever there is water related disaster upriver, these villages get flooded. The period of the floods is in September and the water can take up to two weeks to recede. When water rises and enters the village, many problems happen. Crops in the fields are damaged. Grain storage areas normally built on the ground floor are damaged, which affects food for other months. Small livestock also suffer. It takes almost a year for people to recover from the losses that a flood brings.

The model here highlights two things. One is the growing of a 90-day rice crop, which can be harvested before the floods occur. (The traditional rice being longer than 90 days would be destroyed by the flood.) The second is the design of diversity. Notice the number of short duration vegetable crops. Their growing periods can be delayed by a few weeks if needed. This permits their planting after the flood. Most of these can be harvested within a range of 4 to 8 weeks. The dots in the crop lines above show the harvesting period. These are backed up by fruit trees. Main cereal crops are also grown. The bunds have been planted with long-term hardwoods and fruits. The branches of the hardwoods can be used for fuel. A new tissue-culture banana has shortened the banana crop from 18 months to 12 months. In addition, ducks have been introduced. Ducks lay after four months of care and are supposed to average about 300 eggs in the year. Vegetarian families are more interested in plant diversity, while those that are non-vegetarians invest also in ducks, goats, etc. No matter what their religious beliefs, all are being encouraged to practice as much diversity as possible. This combination of short duration crops and as much diversity as possible provides several layers of safety nets. If one thing fails, there are others to depend upon.

Poverty case 5: From 4 months of food shortage 3 years ago to food sufficiency, diversity of income, & 75% income increase

Smt. Sukha Devi, Aligarh, Campierganj



This another case shows significant improvement in 3 years. Refer to the control family in the earlier diagrams. One of the families there has 1.5 acres that is supporting 8 persons. Yet, their periods of hunger and lack have not changed much over 3 years. In contrast a family who have 1.75 acres (a quarter acre more than the control) in 3 years have overcome the four months of shortages that they faced. They have diversified their livelihood system. Livestock backs up a large variety of crops. The 2 buffaloes and 4 goats were bought with loans from the SHG. The single ox is teamed up with an ox from another local household to carry out tilling operations. All of these are further backed up by trees for wood, fuel, fruits and green manure. Notice the dots, which signify harvesting. Almost every month has something to be harvested. Notice also the plus signs. This is when prices are high for early entrants into the market. The improved goats fetch about Rs.2200/- each after a year's care. Two buffaloes mean that the cost of maintenance in dry periods is reduced, as one of them is likely to be giving milk. According to this family's estimate, their income has increased by about 75%.

Conclusion

What has GEAG managed to do? They have eliminated external inputs into the farm. All the seeds and fertilisers and pesticides that SHG members need are available within the groups or within the household. Individual members buy from other members. Resources are recycled within the group. At the household level agricultural waste and manure, create fertiliser. Worms create more fertiliser. The introduction of diversity in crops has created access to food and cash throughout the year. Fruit trees, firewood, hardwood, green manure are all grown on the land. Each strategy has several others as backup in case one fails. Short duration crops are grown along with long duration crops. Duck, chickens, goats, buffaloes, cows, provide further diversity. The landless depend on animal husbandry and some are able to rent agricultural land for cultivation so that they do not need to spend money on food. The model farmer in the poverty analysis no longer needs to sell labour. She has food throughout the year. No resources are leaking from her livelihood now. Brick-and-mortar houses provide a sense of security to the poor. They also reduce seasonal diseases associated with hot, or wet or cold weather. The eating of food, which has no chemicals also, reduces sickness. This reduces expenses on medical attention. The poor are often not able to read and write. This makes them victims of agents/middle men near bank and government offices to which they have to pay money to fill forms. Officials sometimes take a commission for the approval of a loan or house. More resources leaking. However, in GEAG villages, the SHGs have stopped all of these payments. They use their own members for writing. No commissions are paid. The SHGs also ensure that members continue to make repayments of loans to the bank. This ensures that they can continue to access loans. In short, trade within members recycles money within the members; complexity and diversity of livelihood sources at the household level ensure both food and some cash; links with formal lending institutions keep interest levels at those controlled by the SHG. This helps surplus to collect at the household level as well as the group level. The people have confidence in their ability and real hope of working towards a better tomorrow.

This is a real life story of an NGO working with poor people where visible examples exist that show that poor people have overcome their seasonal hunger periods. Their energy and resources are now directed at building some surplus every year.

Poverty Reduction Evaluation Ends Here

Acknowledgements: The villagers in the four villages mentioned here along with staff of GEAG were involved in the creation of the original seasonality diagrams and maps with conceptual guidance from me. Others whose ideas have influenced the thoughts here include Vincent Ostrom for primacy of people, Lin Ostrom for institutions, Robert Chambers for PRA, Norman Uphoff for encouraging using PRA in a comparative setting, Shiraz Wajih and GEAG staff for the opportunity to do the field work to prove that poverty reduction is possible, Colin Williams for encouraging innovations in evaluations, HODI Zambia, IDE Zambia, for making a beginning in this.

Thank you all.

Sam Joseph , Bangalore May 2005

Additional information:

The evaluation pack has the following files:

1. Poverty Reduction Evaluation
 2. Evaluation of Organisational Plans Using a Simple Systems Approach
 3. Institutional Analysis: Participation Probe
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