

CHAPTER-VI: CLIMATE ADAPTATION AND GRAM PANCHAYATS – EVIDENCES FROM THE FIELD

Having analysed adaptation concepts and role of PRIs in disaster management, inter-alia emphasising that adaptation essentially involves vulnerability reduction and hence linked to development which is one of the major area of work of the PRIs, and after highlighting climate vulnerabilities in Orissa to show that the coastal region of Orissa is doubly jeopardised because of climatic variability as well as widespread poverty, this dissertation will now attempt to present some field data to corroborate the trends highlighted in the previous chapters. As outlined in chapter-II, the field data comes from a rapid visit of four villages in two coastal districts of Orissa, Puri and Khurda, which were selected because of their recent histories of flood and cyclone. The next section highlights the features of each sample village and the kind of climatic variability/event experienced by the village recently. Then the chapter proceeds to analyse some of the elements of these events against the concept developed in chapters II and IV.

Climatic events in sample villages

As all the sample villages are located within 50 kms. of the coast of Orissa, they have been regularly subject to cyclones, mainly originating from the depressions in the Bay of Bengal. But most of them are short duration and only rarely they are of severe type. The villagers not only increasingly learn to live with these cyclonic depressions accompanied by incessant rains, but also their experience draws heavily on the learnings from the 1999 Supercyclone. The work of Orissa State Disaster Management Authority (OSDMA) further provides a formal mechanism through which people's institutional memory and experience gets further strengthened. Amidst such continuous interaction with nature, people's response to the sudden devastating flood in later part of 2008 was uniquely placed even though it has fallen far too short of the expectation.

More glaringly, the weak linkage of disaster management with the PRIs compounded the holes in relief, post-facto reconstruction and adaptation planning responses of the Gram Panchayats to address future climatic responses resulting in sudden flooding.

Billipada village

This village, approximately 12 kms. from Pippali Block headquarter, is connected to Bhubaneshwar - Puri highway by part kutchha part pucca road with a large section lying on the left bank of an old wide earthen canal to drain flood water in the rainy season and provide irrigation during the summers. Most parts of this canal has fallen in disuse after it silted up gradually, but the 2008 floods have raised sufficient alarm to initiate desilting of those parts of the canal. The villagers experienced flood in 2008 for the first time in their living memory, though they heard about it in 1982 when the flood waters reached up to about 10kms from the village. The proximate cause of flooding of this village in 2008 was damage to the protection bund along Bhargavi river, a tributary of Mahanadi, which is some 10-12kms away. Villagers heard about a government warning in the night of 19th September 2008 that the gates of Hirakud dam over Mahanadi river were being opened due to imminent threat of breach. The incessant rain during the week had already caused water to reach danger level in Bhargavi river, which further worsened because of Mahanadi flood, and the last minute efforts of the local district administration to save the situation by filling-up sandbags along the leakage points of the Bharagavi river protection wall could not succeed. By the morning of 20th September 2008, that is almost within 8 hours, large parts of Billipada village were already marooned.

Besides breaching the access road to the village at many places, the flood waters inundated almost 80% of the standing paddy crop which remained submerged for more than a week. The paddy crop was so severely diseased that the grain completely rotted into white foul smelling powdery substance while the paddy stalk could not remain fit for even

animal consumption. Villagers were reluctant event to use this for even composting.

Although the 2008 flood was an unexpected event, the villagers clearly feel that both frequency and severity of cyclonic depressions have increased in the last decades. Some of the villagers attributed it to global climatic change whereas others believed it to be a combined effect of global climatic change and missile testing at a nearby location. In such villagers' view there is a correlation between the start year of missile testing about 15 years ago and increase in depression events, also pointing out that each missile testing is followed in a few days time by a depression event. They, therefore, prepare themselves by storing flattened rice and *sattu* (roasted gram flour). There is no shortage of drinking water during that period, so special arrangements are not required in that regard.

Sutana village

Sutana is a rather large village with a population of around 3000 (around 1000 households). Around 80% households belong to the *Khandait* caste (agriculturists), while around 20% are from various Scheduled Castes. *Brahmin* households are only 2. This village experienced floods from Kushabhadra river in the year 2000 and again in 2008. Besides, this village being near to the sea coast, experiences periodic flooding each year for about 7-15 days because of high tides causing backwater flooding in the proximate catchment including in this village. Though the village is guarded by an earthen protection wall constructed in 1960s, water logging on both sides causes extensive damage to the crops while road access to the village remains cut-off for that period. During 2008 such backwater flooding, being sever than before, caused damage to standing paddy crop up to 50% of the cultivated area. In addition, a village pond which was leased for pisciculture by the Gram Panchayat to a local fish farmer also got flooded and the farmer suffered huge loss because of lost fish seeds. The restocking could not take place yet for want of adequate finance. Villagers clearly feel that the frequency and duration of backwater flooding

has increased significantly in the last few years whereas the timing and duration of rainy days has also become quite uncertain causing unresolved pressure on farm-level planning and decision making. Substantial loss of livelihoods opportunity in the recent years has caused migration (in fact it could be both because of push and pull factors, but for my village respondents the increasingly adverse climatic conditions are more proximate cause) to major industrial locations such as Daman(textile units and ancillaries and plastic mills), Surat (textile units and ancillaries), and Hyderabad industrial area (mixed industries).

Baliguali village

Alike Sutana, Baliguali village is also near to the sea coast. It is a large, comparatively affluent village by coastal Orissa standards because of mixed occupational pattern afforded by its proximity to the temple town of Puri. This village also experiences regular backwater flooding as the protection wall, constructed in the 1980s by the State Irrigation Department, covers a small portion of the village where the intensity of damage has reduced. This small group of farmers is quite influential in building a public opinion in favour of extension of the protection wall funded by government, while the voice of the adjacent farmers on the leeward side of the wall, whose farms remain submerged for much longer periods now, remains almost subdued and unheard. This was so during my focus group meeting also with the villagers. Such parts of the village which are not covered by the protection wall gets submerged because of backwater flooding but recovers faster too.

The villagers easily recall that there is sharp increase in the frequency of cyclonic events. Elders recall that 30-40 years ago, such events occurred only once a year. This has now increased to 2-3 times a year, occurring first in July/August and recurring in September/ October. The duration – from 3 to 7 days – has remained the same, though. Loss of peripheral plantations and forests in the 1999 Supercyclone now facilitates direct hit of salty winds on the village which not only adversely affects paddy crop in terms of productivity, but the roof thatching of their houses

needs to be changed every year and the walls get weaker rather quickly. Farmers are using high-input HYV cultivars to cope with reduced agricultural productivity due to salty winds, further exposing them to financial risks and deeper vulnerabilities. The risk gets compounded during June-July, as backwater flooding during this period could cause much intensive damage to the freshly transplanted paddy crop. Increasingly uncertain weather has motivated farmers to take loans from financial institutions to install private borewell, as the 4 government borewells are proving grossly insufficient now.

Anjira village

Anjira is a small village of about 80 households with around 75% Schedule Caste population. Almost 50% of them are landless, but also engage in sharecropping. There is not much migration from this village, as opportunities for labour for farm and masonry work do exist in the nearby localities.

Alike Billipada village, Anjira village also experienced severe flood event in the night of 19-20th September 2008 from waters from Bhargavi and Kushobhadra rivers situated around 5 kms away (both rivers are tributaries of Mahanadi; flooding in these rivers largely due to flooding in Mahanadi river). The flood caused extensive damage to the crops and roads. Almost 90% of the village roads got damaged in that flood event. The 2008 flood was not a new event to this village, as previous flood years were 1982, 1983 and 1990. The severity of the effect of flooding was much intense in 2008 though. The loss of protection by eucalyptus and acacia plantation patches (totalling about 15ha) around the village by the 1999 Supercyclone, also contributed to the severity of the effects of flood.

Response to 2008 floods: relief and reconstruction

Billipada village

The response to the 2008 floods has been quite divergent amongst the sample villages. In Billipada village, where the people experienced flood

for the first time, the response has been towards early completion of the projects sanctioned under the Flood Damage Restoration (FDR) scheme, which mainly comprised of repairing of village roads and building new culverts on these roads. In all 38 projects were sanctioned in Laxminarainpur Gram Panchayat (G.P.) of which Billipada village is a part. None of the road, or their vulnerable sections, has been made concrete as the local Block Development Officer (BDO) informed GP President (also from this village) of the inadequacy of funds. It was learn later, however, that some funds actually lapsed or transferred to other GPs. Yet, there was no organised protest from the villagers of this GP over this issue. This was quite strange as there was genuine requirement for more funds in this GP. Local politics did play a role in such alleged lapsing/transfer of funds. The GP President and the Block President are both members of same opposition party whereas the local MLA is from the ruling party, and the BDO sensed apparent tension between these two groups escalating if more works are allotted to this GP. Likewise, there was no allotment under Indira Aawas Yojana (IAY, housing scheme for the poor) yet although there is an informal quota of 34 houses for this GP. This GP suffered severely in the floods, yet there has be no organised negotiation by the GP with the local BDO to increase the quota of IAY houses this year.

The low level of people's mobilisation in the PRI, and the absence of a sense of '*a village community*' was apparent in this GP, as no Gram Sabha (general assembly of the village) has taken place in this village for more than a year contrary to the Orissa PRI Act. The last executive committee (EC) meeting of the GP took place almost a month ago, mainly to discuss the relief work, i.e. repair of the roads. The GP did not have any experience in this regard, neither it has any village level disaster preparedness plan or training under the OSDMA. This was so perhaps because this village had not experienced any disaster event (flood) in the past.

A small NGO, *Muktipath*, has its headquarter in the village, but discussions during the field visit revealed poor people's participation in its activities, indicating relatively low level of trust among the villagers (Putnam 1993).

Up to December 2008, 6 Self-Help Groups (SHGs) could be constituted in this village out of which 4 are of Scheduled Caste members only. The SHGs are credit linked to the local branch of State Bank of India, and have been provided loans in the range of 20-30 thousand rupees for pisciculture and paddy cultivation including in the four village ponds leased to them by the GP last year at an annual rental of Rs. 1000 each. Unfortunately, all the recently stocked fish seeds in these ponds got washed away in the 2008 floods, yet there was no special effort by the GP to reconstruct the livelihoods of these SHG members confirming the original perception of the poor level of people's mobilisation and popular participation in this GP.

There has been, though, increase in the feeling of '*a community*' after the floods, as the last EC meeting of the GP was much more engaging and longer duration, and greater number of EC members participated for the whole period of the meeting. This account corroborates the argument that crisis or scarcity situations promote self-strengthening of people's institutions in both formal (rules, procedures) and informal (norms, networks) domains, and in the absence of such events/ context an institutional vacuum might exist.

Sutana village

In view of recurrent experience of flood, villagers of Sutana did not view 2008 floods as a special event. But they are, in general, much organised in demanding works that reduced their vulnerability to such extreme climatic events. Their priority under the MLA fund was to construct cement concrete (cc) access road to the village as well as for the village streets. In this regard they have been continuously pursuing the local BDO and the MLA, and this year also about ½ km cc road was sanctioned. But ironically, this issue was far more emphatically raised in independent

meeting of villagers with the BDO/ MLA, than taking this up through the formal institution of the Gram Panchayat. The reason perhaps was the fact that the Sarpanch and the Block Pramukh (Panchayat Samiti President) belonged to opposition party whereas the local MLA was a ruling party member. As a result, the integrated village-level planning suffers badly. Since there is not enough money under any such scheme to cover the whole village in one year, sites for part cc roads are chosen based not on the objective criteria of neutral technical planning, but on the alleged proximity of various villagers' groups to BDO/ MLA. One can, thus, see in this village, patches of cement concrete (cc) roads interspersed here and there within the *kutchra* roads and streets, thereby seriously compromising the overall accessibility in this village and the wisdom of large expenditure on such items.

Sutana villagers had mobilised popular support for construction of a drain, about 3 kms. long, to drain excess water into the nearby Kushabhadra river and then to the nearby sea. But this drain becomes a major hazard during the high tide period when the water is high in the river, and heavy downpour during rainy season tends to submerge the whole village. This case is a clear illustration of mal-adaptation to climate change.

Learning to live with the flood, the villagers have taken to growing indigenous varieties of paddy (like *Pahariya*, *Champa*, *Kakurmanjhi*) than using varieties developed by agricultural scientists. In fact they were unaware of such varieties developed by scientists.

The low level of people's mobilisation in the PRI was apparent in this village too, as there was no *gram sabha* meeting in the last six months, and no meeting could be held after the 2008 floods to develop a masterplan for rehabilitation or future adaptation. Much more importantly, the villagers demanded that the new village drain be constructed by the government department, not by the Gram Panchayat as it did not have the technical capacity but also because people did not have trust in the Gram Panchayat because of internecine conflicts.

Baliguali village

Like Sutana village, the villagers of Baliguali have been experiencing floods through backwater intrusion and hence they were not highly alarmed when the news of impending 2008 flood was broken to them. In their view the problem of flooding is most serious when seedlings have just been planted, which period had already passed by the time the flood news came in. They were more concerned that brackish water (unlike fresh water from the 2008 floods which mainly came from the Mahanadi river system) should not enter their fields as brackish water causes maximum damage to the crops.

Incidentally, this village has had several rounds of capacity building training under the OSDMA programme and also they have had regular exposure to the multi-purpose cyclone shelter constructed under the OSDMA. Thus they were not so much apprehensive about the damages of the 2008 floods, taking the 2008 flood as another common incident that occurred previously. Distinctly though, the meteorological instruments installed in this village under OSDMA (e.g. wind speed measuring gauge, rain gauge, etc.) contributed to higher degree of risk perception and flood preparedness this time during the 2008 floods. The villagers could, thus, better prepare themselves with good stock of flattened rice and fresh water.

Meetings of the Panchayat have taken place after the 2008 floods, to further strengthen people's resolve to pressurise the local MLA for providing more funds for extending length of the flood protection wall, and also increasing its height to about 20 feet.

The 2008 flood also increased people's willingness to experiment with new technologies. 5 households agreed to field the demonstration plot of the new CR190 variety of paddy, which was riskier in the sense that it required permanent moisture condition in the field; the yield going down drastically if dry soil conditions prevailed for even 3-4 days.

Anjira village

The response to the 2008 floods has been quite alike Billipada village, where the people experienced flood for the first time. Here also the response has been towards early completion of the projects sanctioned under the Flood Damage Restoration (FDR) scheme, which mainly comprised of repairing of village roads and building new culverts on these roads. Like other sample villages, local politics did play a role in allocation of funds. The GP President, Block Panchayat President, and the local MLA were from the ruling party, which put pressure on them to perform and seek more funds for village developmental works.

The higher level of people's mobilisation in the PRI, and the sense of 'a village community' was apparent in this GP, as more frequent (though not regular) Gram Sabha meetings take place in this village than other villages. Whether it had to do something with the fact that the GP president was a young woman from an upwardly mobile community, which has been trying to forge a respectable identity for its members, could not be researched as it would have required a different design altogether. But the apparent fact was that the elected representatives being from the same party indeed helped the situation.

In this sense there has been increase in the feeling of 'a community' after the floods, as the executive committee meetings of the GP were much more engaging and longer duration, and greater number of EC members participated for the whole period of the meeting, after the floods. This account corroborates the argument that crisis or scarcity situations promote self-strengthening of people's institutions in both formal (rules, procedures) and informal (norms, networks) domains, and in the absence of such events an institutional vacuum might exist.

Adaptation measures post 2008-Flood

Billipada village

The lack of people's participation and mobilisation of the GP was apparent in negligible policy-led adaptation measures taken by formal institutions.

Since the canal, which also brought flood waters to this village, was severely damaged in the 2008 floods and was still under repair (December 2008), villagers were expecting a delay of more than 15-20 days before the resumption of irrigation from this canal. The exact date of resumption of supply was uncertain. This in turn would delay their paddy transplanting leading to loss in productivity up to uncertain levels. Even though a large percentage of farmers in this GP would be affected by this uncertainty of delay, there was no organised effort by the GP to press the matter before the local irrigation department and expedite the matter. At individual level, farmers have started taking small time autonomous adaptation measures, like switching over to *Khandgiri* variety of paddy which is of shorter duration. But this meant additional cost to the farmers, and only those who were affluent could afford. Due to the idiosyncratic nature of the effect of 2008 floods, the farmers were not also able to exploit their network of friends and relatives (though this also appeared quite weak in this village) to seek seed loans, causing further hardships for the poor. Even though this was a matter of relevant to most people in this village, this could not be discussed either in the EC meeting of the GP or in the Block-level meeting of the Panchayat Samiti.

Under NREGS, which has been launched in this district in 2008-09, 600 job cards have been prepared in this GP. Only 32 cardholders could be engaged as, apparently, only Rs. 50000 was available this year with which the work of deepening of a village pond has been started (before the floods). The remaining job cards were still lying with the GP President, apparently under the advice of the local BDO, for the fear that once people got their job cards they would start demanding work which could not be provided for lack of funds. Relation of NREGS with adaptation measures are not well defined, as villagers agreed that the deepening of pond was chosen primarily to insure against water shortage during the summer season which is becoming increasingly acute but there was no definite sense that this shortage did not occur because of increased faulty use of water or overuse due to gradual adoption of double cropping (mainly paddy) in a year. The NREGS work did have impact on reducing

the vulnerabilities, especially of the landless people in the village though. Indeed they were the ones who got priority job under NREGS (unlike some other villages, where the semi-elite or the new-elite grabbed this opportunity also of resource transfer to the poor). The wage monies under NREGS also provided them with the opportunity to better pool resources for the household level coir work in which they were engaged otherwise. The work of deepening of pond was also chosen - and this directly related to the process of consolidation of power and authority of the present *Sarpanch* - for the purpose of leasing out for pisciculture. The *Sarpanch* lamented the merger of the previous employment creation scheme, namely the Sampoorna Grameen Rojgar Yojana (SGRY) into the NREGS, as the SGRY provided much latitude at the local level for the types of work that could have been executed. Thus, he regretted, he could not undertake cement concrete road construction in the low lying patches under NREGS now to ensure permanent connectivity even under the threat of flood.

The GP has also planned to take up tree plantation with the next tranche of NREGS funds, on a land where a failed plantation (due to heavy grazing pressure from an adjoining village). Stands. This will serve the dual purpose of shelterbelt plantation to counter gusty winds from the north-east direction during the periods of low depression and ensure a good supply of fuel for the poor villagers. However, 20-30% of the land over which plantation is to be done (20 acres approx.) has been encroached because of the laxity of Revenue Department which controls the land. The GP has no say over control of these common lands. But the *Sarpanch* and other villagers could not satisfactorily answer how this time they would be able to get the encroached land vacated or what new mechanism will be put in place to ensure that the plantation is not grazed once again. But they agreed that they could try discussing these issues in the next Gram Sabha (encroachment issue) or the Panchayat Samiti (grazing control issue) meetings.

Sutana village

Alike Billipada, the lack of people's participation and mobilisation of the GP was apparent in negligible policy-led adaptation measures taken by formal institutions. Since the embankment constructed to defend the village against flood, caused submergence on a substantial chunk of land on the other side for a long duration destroying the crop for almost completely, one would have thought that villagers would collectively deliberate options for modifications in the embankment (e.g. constructing sluice gates at additional points which became vulnerable during the 2008 floods). But the villagers could not recollect any village-level meeting for discussing such issues, much less such discussion in the gram panchayat meetings. At individual level, farmers have started taking small time autonomous adaptation measures, like switching over to another variety of paddy which is of shorter duration but during the discussion they could not recall the exact names of these varieties also signifying that agricultural extension is very poor in this village. Moreover the fact that this village has large number of migrants to lucrative industrial towns of Daman, Baroda, Surat and Hyderabad, also contributed to the low level of interest in agricultural extension as a means of insuring and improving livelihoods.

Under NREGS, 720 job cards have been prepared in this GP but only 326 cardholders have been handed over these cards. Remaining cards are still in the custody of the Panchayat president just like Billipada village could be engaged as, apparently, only Rs. 50000 was available this year with which the work of deepening of a village pond has been started (before the floods). The remaining job cards were still lying with the GP President, apparently for the same reason as in Billipada that people's demand will far outstrip resources under NREGS. There was no relation of NREGS work with adaptation measures, as villagers here also agreed that the deepening of 4 existing ponds (each of 4-5 acres size) under NREGS has been planned primarily to insure against water shortage for both *rabi* and *kharif* crops. The sense that deepening of pond was not directly related to adaptation work is also based on the fact that the Panchayat president was keen on leasing the ponds to fish farmers not only to earn

money for the GP but also that this leasing away consolidated the power and authority of the president. Then, in villagers' view only 2 out of the 4 ponds belonged to the Gram Panchayat whereas remaining 2 were on Revenue Department land. In fact the villagers lamented that one of the pond has been given for pisciculture lease for 5 years, and hence they could no more use this pond for their farm irrigation. But the GP president insisted that he had the full authority over leasing of the ponds. A clear cut disconnect between people's and GP president's priorities was quite apparent.

Strangely, there was least knowledge about the national agricultural insurance scheme which is already operational since last 5 years across the country, indicating a lack of concerted effort and the capacity of the Gram Panchayats to promote policy-led adaptations.

The meeting of the Executive Committee of the Gram Panchayat was held some 6 months ago (before the floods). The villagers could not recall any *gram sabha* meeting held in last one year; perhaps *palli sabha* (below revenue village) meeting has taken place about an year ago, but in that also the subject matter did not relate to the protective measures for any possible flood/ cyclone damage. The low level of activity in the Gram Panchayat was apparent from the fact that there is no disaster management plan for this village under OSDMA; or at least the villagers (including the GP president) did not have knowledge that such a document exists or required for such villages that are located so close to the sea point where erosion and flooding is a major issue.

Baliguali village

Compared to the dismal picture in Billipada and Sutaan villages, interactions with villagers in Baliguali offered hope for successful promotion of policy led adaptation by the village level institutions. The village has 4 government-installed irrigation borings (pumping stations as they are locally called) of 10 HP each catering to about 100 acres in all. These stations are operated by farmers' committees, of 25-30 farmers each. The committees are also responsible for minor repairs, so the Lift

Irrigation Department has provided Rs. 10,000 this year to these committees. The Gram Panchayat members extend full support to these committees. Indeed, the working of these pumps is essential to deal with another type of climatic extreme, i.e. drought. But for the flood also, the committees, supported by the GP, has plans to raise the height of parapet and the platform so as to keep the boring well protected. The committees are also encouraging other farmers to install private borings (irrigation pumps) seeking bank loan, for which the GP is providing active support.

Under NREGS, however, this village like other study villages chose to undertake deepening of ponds – 2 larger ponds of 1 acre each, and 3 ponds of 40 decimal each. These ponds were also meant for irrigation and pisciculture, but unlike other villages the pond will not be given on lease to a single fisher on payment of lease rent. Rather, the eco-development committee of the village will operate it without paying any rent to the GP.

The greater degree of mobilisation of village institutions in Baliguali was also apparent from the fact that agriculture technology extension has been quite successful. Presently, the villagers are experimenting with the SRI method of farming, which being closer to organic farming, ensures longer term sustainability of crop production. 5 farmers have also agreed to locate demonstration plot of 1 acre each on their farms, for raising awareness about CR190 variety of paddy which could withstand higher moisture conditions for longer durations than traditional crop varieties.

An important aspect of this demonstration was "risk" as CR190 variety can not withstand dry conditions for more than 3 days and in case there is not adequate rainfall the demonstration plot will fail and the farmer will lose the whole crop on one acre which is a substantial measure in this part of the state. Yet the village institutions encouraged these farmers to take-up demonstration, implying that these experimenters had faith that these village institutions could be relied upon for provision of food/ seeds etc. in times of scarcity. The implied trust and network were important elements of social capital for development (Putnam 1993, 2000).

Anjira village

Alike Baliguali village, the functioning of GP in Anjira offered hope for successful promotion of policy led adaptation by the village level institutions, but at a different level. Here, as opposed to the institution as such, the personality of the GP president was much more important indicating that the actor-based approach to development has some empirical value. This was apparent in instances when the president took extra steps to ensure that her GP receives its due share of funds under the FDR scheme for reconstruction related to 2008 floods.

Under NREGS, 1500 job cards have been prepared in this village, out of which 300 are from Anjira village (the home village of the GP president). Cards have been prepared for all those who have applied. Rather it was the case here that the president herself went from street to street to collect job applications which was not the case in other villages. This village like other study villages chose to approve deepening of ponds – 5 ponds of 1 acre each in the whole GP out of which 2 ponds were in Anjira village, with the NREGS funds. The work is due to start soon. One pond in Anjira village will be leased for pisciculture, and the lease rent will be utilised for running the office of the GP as well as for maintenance of the 4 tubewells through the village-level trained technicians, thus providing local employment also. The other pond in the village was desilted about 5 years ago with the MLA funds, but as Anjira is a water scarce village in the summers, villagers wanted further deepening of the pond which would enable enough water holding for irrigating summer vegetables which are in great demand in Bhubaneswar and Puri. Disinct from other villages, the selection of the works under the NREGS appeared to well thought out and well deliberated processes. In one sense, this work was directly related to climate change adaptation directly (through increased water storage) and through increasing people's resilience and livelihoods (through income). The success of actor-based approach to development was, thus, dependent on wider people's acceptance also, which the GP president actively pursued throughout.

It has also been planned to take up plantation With NREGS as a means to provide storm protection as well as to provide fuelwood to the needy villagers in times of scarcity. The choice of tree species (e.g. *Acacia mangium* for timber, Eucalyptus for poles, and Casuarinas for firewood) indicated that GP members are not only well informed but have planned the activity to a greater detail.

Relationship of PRI with other committees in the village

Billipada village

The president considered it necessary for the PRIs to be intimately associated in the planning and execution of the self-employment programme, namely Swarnjayanti Gram Swarajgar Yojana (SGSY) as it could improve the overall planning and truthful prioritisation of the members of the SHGs and their livelihood activity.

A village education committee does exist in the village,²⁷ but it has no relation with the GP. The school directly administers this committee, whose last meeting took place some two years ago. No further meeting has been conducted even after villagers request in this regard.

A new village health committee has been constituted in August 2008, but the details were not known to the Sarpanch as this committee has not started functioning yet. Clearly, the Sarpanch and the participant villagers of the focus group discussion did not have much idea of the modalities or the process of the constitution of the committee.

Sutana village

There was least interaction of GP with other village level committees. There is no health and sanitation committee, or the respondents did not know about it. Villagers expressed helplessness that despite their desire the ANM (auxiliary nurse midwife) doesn't stay back in the village, living in Konark which is about 10 kms. away. A village education committee exists, which is about a year old, for the high school, yet there is least

²⁷ Villagers were not sure if it was a full scale education committee or an ad-hoc parent teacher body voluntarily constituted by some school authority.

interaction with the villagers or the GP. There is none for the primary or middle school. There was high degree of distrust in village institutions amongst the villagers themselves. As mentioned before, the villagers wanted the drainage channel work to be done by government department not by the GP. Similarly, the villagers complained about the Mid-Day Meal in primary school being cooked by a village SHG, and now teachers are themselves getting food cooked through a hired labour. The callousness of the situation was further apparent from the fact that most of the Lift Irrigation staff in the village were continuously absent but the GP executive members did not take adequate efforts in ensuring their presence.

Baliguali village

This village was distinct from other villages in the sense that people's mobilisation was quite apparent (indicated by large number of people gathered for my focus group discussion inspite of short notice by the Panchayat president) here. This mobilisation also came from the synergy which was built between different village-level institutions (e.g. the ecodevelopment committees, village disaster management committee, and the Gram Panchayat). The causal mechanism of this synergy could not be analysed as this was not the focus of this research, neither there was adequate resource available for this type of work, but an apparent cause was the permanence of traditional authority (village elders) in this village who then mediated constitution of various committees and acted as bridge between them.

Anjira village

Anjira was a unique village in terms of its network of village level institutions, which in some ways was similar to the one in Baliguali village. Both government and non-government organisations maintained cordial and dense relationship with the GP. Thus, a ward member was nominated by the president on the village health and sanitation committee, as well as a village level monitoring committee has been established under the chairmanship of a ward member to oversee the flood reconstruction work.

At the downward network level, the GP also encouraged and supported the constitution of SHG for maximising fund utilisation under SGSY scheme. To this end, it was also ensured that these were women SHGs as they stand better chance of credit linkage with the bank. This also demonstrated that the GP president was not only well informed about the scheme guidelines but also kept herself abreast of the various administrative nuances of these. It was these type of networks which helped the village at the time of flood relief also when several NGOs (e.g. Utkal Deepika Club, PKK, etc.) chose this village for their work. In a deft move, the president also consults the traditional village elder (*mukhia*), who is quite influential, on important items of work on the pretext of maintaining village dignity, thereby garnering larger support for her work. Indeed, the role of panchayat president in this village was quite impressive and one may argue that such an actor-oriented style of working may not be conducive for long-term institution building. But conversely, it may also be argued that the involvement of representatives of GP in other committees indeed created opportunities for strengthening of institutional plurality which by itself is a large developmental outcome.
