
Benefits and Weaknesses of Collaborative Management: A Case Study in the Rema-Kalenga Wildlife Sanctuary

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Abstract

Examining existing co-management practices can lead to an understanding of the suitability and potential for implementing this strategy in other protected areas (PAs). Specifically, an analysis of the benefits, linkages among actors, perceptions of local people, and their future implications for the sustainability of co-management committees (CMC) can assist in the development of better national policies and institutional mechanisms for implementing co-management in the protected areas of Bangladesh. This paper presents a case study of Rema-Kalenga Wildlife Sanctuary (RKWS), a 1,795-hectare site located in northeast Bangladesh on the Indian border. I collected primary information through informal group discussions, focus group discussions, key informant interviews, and household surveys. Some findings were unanimous—each respondent felt that natural resource depletion had been reduced and that local communities had benefited, mainly through alternative income-generating activities (AIGAs) provided through the support of NGOs and foreign governments. Moreover, all respondents confirmed that AIGAs are insufficient in terms of both the amount dispersed and the number of beneficiaries. This study suggests that the institutional sustainability of CMCs is tenuous due to insufficient AIGAs, a lack of interaction by CMC leaders and Integrated Protected Area Co-management (IPAC) project team members with grassroots people and organizations, inadequate road connectivity and infrastructure development to promote eco-tourism, a dearth of programs to promote awareness and motivation, insufficient small loans, a lack of a fixed income source for the CMCs' budget, insufficient policy and legal instruments, and weak incentives for community patrol groups to perform their services.

Introduction

Collaborative management or “co-management” of protected areas is a participatory approach to natural resource conservation that also can lead to improvements in local livelihoods. Protected areas (PAs) are specifically devoted to the protection and conservation of biological diversity and are also focused on cultural heritage. They are managed through legislation and other effective policy and institutional mechanisms, including co-management initiatives. PAs are declared and are then

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regulated or managed to achieve specific conservation objectives (IUCN 1994; Mukul *et al.* 2008; Mulongoy and Chape 2004).

Conventional forest management has been unsuccessful in arresting or slowing deforestation, degradation, and encroachment of forests in Bangladesh. The experience of communities worldwide, as shared in the First, Second, and Third World Parks Congresses, has confirmed that the sustainable management of forested PAs requires minimizing the dependence of local people on forest resources, while also bringing them into the mainstream of forest management as direct beneficiaries of these protected habitats and resources. This experience has demonstrated to forest managers in Bangladesh that, without the active participation of local people in the management and benefits of PAs, there is limited scope for the success of forest ecosystem conservation. The experience of the global community, combined with the continuing degradation of PAs in Bangladesh, has led the Forest Department to implement collaborative management strategies. In 2004, they initiated co-management in five PAs through the Nishorgo Support Project (NSP), implemented by the Government of Bangladesh and funded by the United States Agency for International Development (MoEF 2010).

During the implementation of co-management activities at different sites under the NSP, there were many challenges, including a lack of coordination among key stakeholders at the PA level; a lack of understanding about co-management among key implementing actors; a lack of effective policy and legal instruments to implement co-management activities; and a lack of efforts for sustaining the co-management committees (CMCs). After completion of the NSP in 2009, no clear evaluation was conducted. Despite this, many government officials considered the project a success and, under the subsequent Integrated Protected Area Co-management (IPAC) project, the Forest Department (FD) introduced co-management practices in more PAs. However, deriving maximum benefits from natural resource conservation and sustaining co-management organizations in the process has proven to be a significant challenge for the FD.

Examining existing co-management practices and their outcomes in a specific PA can lead to an understanding of the suitability of co-management in other areas, and can thus direct national forest policies towards improving co-management practices in the PAs of Bangladesh in general. This study investigates the perceptions of local people towards co-management and its impacts, examines the extent and nature of relations among major actors participating in co-management, and proposes strategies for sustaining co-management organizations after the completion of the project period, in order to promote increased understanding and provide evidence for policymakers and the stakeholders surrounding PAs for the future planning and implementation of co-management initiatives.

Background

Healthy forest ecosystems can lead to socioeconomic development and thereby contribute to the livelihoods and well being of local communities that depend on their resources. Forests also serve as carbon sinks, helping to stabilize the global climate, regulate hydrological cycles, and provide habitat for biodiversity, while hosting a wide variety of genetic resources. They can also contribute substantially to poverty reduction, livelihood development, the creation of employment opportunities, and many more ecological and economic activities and services (USAID 2011). However, the increasing utilization of forests for agriculture, settlements, fisheries, industrialization, urbanization, and the collection of fuelwood, construction materials, and other resources puts tremendous pressure on their natural resources and ecosystems. The consequences of these activities include the fragmentation of forestland, and the loss of biological diversity and wildlife habitat, which have led to broader ecosystem changes. Climate change impacts have further aggravated the situation (USAID 2011).

In Bangladesh the area of legally defined forestland is about 2.52 million hectares, or 17 percent of the total geographical area of the country (Shamsuddin *et al.* 2007). The Forest Department directly controls 1.52 million hectares of this forest, and the District Land Administration controls an additional 0.73 million hectares of forestland known as “unclassified state forest.” The remaining 0.27 million hectares is comprised of privately owned homestead forests (Shamsuddin *et al.* 2007).

Forest protected areas include wildlife sanctuaries, national parks, and game reserves. As of February 13, 2012, the government had declared 17 wildlife sanctuaries and 17 national parks in forested areas through notification in the official gazette, as well as numerous eco-parks, safari parks, and botanical gardens, which are also managed for biodiversity conservation (Dey 2012). These were declared via Article 23 of the Bangladesh Wildlife (Preservation) Order of 1973, which aims to conserve wildlife, nature, and biodiversity (Dey 2012). Forest PAs cover about 265,403 hectares, which amounts to just 1.8 percent of the total geographical area of the country and only 10.5 percent of the total forestland; and most of these protected areas are comprised of the reserved forests (Dey 2012).

In addition, there are about 85,000 hectares of wetlands in Bangladesh, of which 44,000 hectares have been declared as Ecologically Critical Areas (ECAs) by the Ministry of Environment and Forests under the Bangladesh Environmental Act of 1995 (USAID 2011). The overall objectives of the ECAs are to ensure the sustainable use and conservation of wetland biodiversity, and to achieve significant and positive impacts for the long-term viability of the country’s biodiversity resources, which also have importance from a global biodiversity perspective (Kahangire 2006).

The natural high-forest system of Rema-Kalenga Wildlife Sanctuary (RKWS) was

first officially declared in 1981, with an area of 1,095 hectares, and was expanded in 1996 to include a total area of 1,795 hectares. RKWS is part of the Tarap Hill Reserve Forest in Chanurughat Upazila, Habiganj District. It is bordered along most of its northern and western boundaries by reserve forests, along its southwestern boundary by the Rema Tea Estate, along its southern and eastern boundaries by India (Tripura State), and along a small portion of its northern boundary by *khas* lands (owned by the national government and managed by the district land administration) (Sharma 2006).

RKWS is located approximately 130 kilometers northeast of Dhaka and 80 kilometers southwest of Sylhet, between 24°06' to 24°14' north latitude and 91°34' to 91°41' east longitude. It falls under the ecological zone of the Sylhet Hills (Mollah and Kundu 2004). The average temperature in the area varies from a minimum of 27° Celsius in February to 37° Celsius in June, with the monthly average humidity varying from 74 percent in March to 89 percent in July, and an average annual rainfall of approximately 4,000 millimeters (Sharma 2006). RKWS incorporates both evergreen and semi-evergreen tropical forest. The landscape is comprised of rolling hills with small valleys. The highest hill is about 67 meters above sea level. A series of ridges form micro-watersheds with a mix of small streams. The area has rich plant, animal, and bird life. In fact, it provides some of the best bird watching in the country. The capped langur (*Trachypithecus pileatus*) has been identified as a flagship species of the sanctuary (Sharma 2006).

There are Bengali and ethnic minority Tripura settlements located both inside and outside of RKWS. Registered forest villagers living within the sanctuary get some privileges, including permission to live on FD land and to cultivate low-lying land. In return, they provide assistance with plantation management and forest protection. Their livelihoods, however, are mostly at the subsistence level and they also encroach on FD lands that they do not have permission to use, exploiting fuelwood, bamboo, wild potato, seasonal fruits, and other resources on a subsistence basis. There are a total of 36 villages that are primarily dependent on the resources of Tarap Hill Reserved Forest, which encompasses the reserve. One of these villages is located within RKWS, nine are situated on the boundary of the sanctuary, and 23 are located further away from it (Mollah and Kundu 2004). Other settlements that have a stake in RKWS and are located outside the sanctuary, but in its immediate vicinity, have also been identified (FSP 2000).

People living in the 36 villages inside and adjacent to the sanctuary depend heavily on forest resources for their livelihoods. Of these villages, 10 are forest villages (i.e. residents are permitted to live inside the forest in return for assisting the Forest Officers with their work) and eight are tribal villages. Among the outside villages, six villages have medium dependence, 15 have minor-medium dependence, and five have minor dependence on the sanctuary for their livelihoods; and there are two tea estates, Rema and Hoogli, which have minor-medium dependence on the sanctuary (Mollah

and Kundu 2004). Some tea laborers and unemployed people are also involved in illegal resource extraction from the sanctuary. Inhabitants of forest villages exploit the most resources from the sanctuary, followed by local poor people, other local users, and tea garden laborers (*ibid.*).

The NSP assisted local communities with protecting the natural resources of the country. By the end of the project in 2009, eight co-management councils and eight co-management committees had been established in five PAs, including the Rema-Kalenga Wildlife Sanctuary. The Nishorgo Support Project formed co-management committees, people's forums (PFs), nature clubs, youth clubs, forest user groups (FUGs), and community patrolling groups (CPGs). In addition, some alternative income-generating activities (AIGAs) were introduced, including plant nurseries, dairy farming, eco-guide services, and eco-tourism facilities, such as lodges and dormitories.

The Integrated Protected Area Co-management (IPAC) program, active from 2010 to 2013, continues the objectives of the Nishorgo Support Project (administered by the Forest Department) and the Management of Aquatic Ecosystems through Community Husbandry (MACH) project (administered by the Department of Fisheries). IPAC project activities have been expanded to 19 sites. The Department of Environment is also included as a partner in the IPAC program.

Methodology

This study was carried out from July to December 2011 in four villages, Debrabari, Kalengabari, Krishnachara, and Mongliabari, in and around Rema-Kalenga Wildlife Sanctuary. It was conducted in four stages: (1) collection of secondary information, (2) collection of primary data, (3) personal observation, and (4) data interpretation and analysis. The research was designed by using the knowledge and information gained from secondary data, which were collected from various related books, reports, journals, publications, FD officials, local IPAC offices, other government sources (FD, local government executives), and non-governmental organizations (Rangpur Dinajpur Rural Service). Various methods were applied to collect primary data, including household surveys, key informant interviews, informal group discussions, and more structured focus group discussions. Each of these methods is described below and summarized in Table 1.

I worked at RKWS in charge of Sub-divisional Forest Officers from October 2004 to February 2007. Based on this work experience, and on the reports of the participatory and rapid rural appraisals (PRA and RRA) conducted in the study area (Mollah and Kundu 2004), I identified four representative villages in which to focus my research. I chose these villages because of their location, their ethnic composition, and their heavy dependence on the PA. They include Debrabari (a Tripura village located inside the sanctuary), Kalengabari (a Bengali village located at the boundary of the

sanctuary and the reserved forest, and inside a forest plantation area), and two villages adjacent to the sanctuary, but inside the forest plantation area (Krishnachara, inhabited by Bengali tea garden laborers; and Mongliabari, inhabited by Tripura people).

Using an open-ended questionnaire (see Appendix II), I conducted surveys with a random sample of 20 households, five from each of the four villages, in order to collect relevant demographic and occupational information. I selected these 20 households because they were beneficiaries of NSP/IPAC project activities, or because of their involvement in groups and activities such as Nishorgo Shahayaks, community patrolling groups, eco-guiding, people's forums, forest user groups, village conservation forums (VCFs), and ethnic-based groups.

I also conducted semi-structured key informant interviews in each village using a checklist (see Appendix I). Prior to selecting the key informants, I met with local FD staff members to get some basic information about the villages. All four of the key informants were men—three were headmen of their villages (in Mongliabari, Krishnachara, and Debrabari) and one was a member of the local government (in Kalengabari). I selected these key informants based on their broad or in-depth knowledge about the village, including its households, resources, and involvement in co-management activities.

In addition, I carried out four informal group discussions (GDs). I initiated these group discussions randomly, when I found a gathering of people while strolling in the villages. One justification for using such a method is that it is very hard to gather villagers and community members, as households are dispersed and villagers remain busy in various livelihood activities during the daytime. The objective of the GDs was to develop community profiles to identify the benefits gained through co-management activities and the functionality of local institutions, linkages within and between organizations, the scope of additional benefits, and perceptions about co-management organizations and institutions.

Additional qualitative data were collected through focus group discussions (FGDs) with different co-management institutions. In order to collect information on the specific effects of co-management, I conducted a total of 10 FGDs in the four study villages: four discussions with members of forest user groups and village conservation forums with three to four participants in each; one discussion with the co-management committee members; two discussions with FD personnel (one with two Assistant Conservators of Forests, and one with a Forest Ranger, a Deputy Ranger, and a Forester); one with a group of NSP/IPAC team members (IPAC Site Facilitator and Field Organizer); and two discussions with community patrol groups (20–25 in each group). I created one checklist for the FGDs with community members, and another checklist for the FGDs with the FD officials and IPAC team members.

Table 1: Summary of methods used during field research

Methods	Research activity	Respondents (Individuals/ Organizations)	Distribution of interviews/ discussions	Number of interviews / discussions	Total number of participants
Open-ended questionnaire	Household survey	Villagers	5 in each of the 4 villages	20	20
Semi-structured interview	Key informant interviews	3 headmen, 1 community member	1 from each village	4	4
	Group Discussions	Villagers	4 groups from 4 villages	4	15–20
	Focus Group Discussions	FUGs/ VCFs	1 from each village	4	12–15
		CPGs	CMC Office	2	40–45
		FD staff	Forest Office	2	4
		IPAC staff	CMC Office	1	2
CMC members	CMC Office	1	3		

Results and Discussion

In investigating the effects of co-management in the study area, one finding was unanimous: all the respondents felt that natural resource depletion was reduced by 70 to 80 percent according to all 20 household surveys, the four key informant interviews, the four GDs, and the 10 FGDs. My own personal observations from working at RKWS confirm this finding, since I also observed reduced human impacts in the sanctuary now compared to when I worked there in 2004–2007. The undergrowth of the natural forest area was less disturbed, biodiversity seemed to be improving, and the stumps of illegally felled trees were less frequent. This recovery of the ecosystem and simultaneous reduction of human impacts has corresponded with the implementation of co-management at the sanctuary, beginning in 2004 with a pilot project. While there may be other factors that have contributed to these conservation outcomes, co-management seems to have played a significant role in habitat restoration.

The FD continues to have the sole legal responsibility for protecting RKWS, but it is not equipped with sufficient funds, training, or staff to perform its resource protection function effectively—this has not changed. What has changed with the implementation of co-management is that additional efforts are being made by stakeholders who were not engaged in protecting the resource in the past, and thus the PA resources are more protected than before. The views of local people combined with my own observations suggest that involving local communities in forest protected area management can be an effective solution for the protection of forest resources.

In terms of livelihood benefits from co-management, of the 20 households I surveyed, only seven families (35%) had received AIGA support. These seven families were involved in AIGAs such as livestock rearing (cows, goats, pigs), production of vegetable seeds, improved cook stove manufacturing, sewing, fish fry production, horticulture, sewing, and eco-guiding. My research suggests that few families received AIGA support and that, among those who did, the amounts were insufficient to significantly affect their livelihoods. Furthermore, my household survey data revealed that the seven members who received AIGA support or benefited in other ways from co-management are still dependent on forest resources. This indicates that participation in AIGAs did not prevent them from collecting resources from the forest. On the other hand, those who have not received AIGAs were unhappy that they were not selected to receive this support. The participants of the key informant interviews, the GDs, and the FGDs all confirmed that AIGAs are insufficient in terms of both the amount of support provided and the total number of beneficiaries.

When I asked how AIGA support could be improved in order to have a greater impact, all of the respondents agreed that there should be AIGA activities for all forest dependent people. In answering the free-response question “What types of AIGAs do community people need?” three of the four key informants, and respondents in all four of the GDs, all 10 of the FGDs, and all 20 of the household surveys agreed that there should be more road and infrastructure development. While such development does not constitute AIGAs explicitly, it can help to facilitate some AIGAs. For instance, respondents reported that additional investments in eco-tourism would not be productive; a better road would promote eco-tourism and provide greater opportunities for the people to improve their livelihoods. Other responses noted the need for no-interest loans, grants, and the provision of various other facilities and productive inputs, including domestic animals and poultry, rickshaws or rickshaw-vans, improved stoves, cotton for weaving, pond excavation, fish stocking, deep tube wells, power pumps for irrigation, sanitation and medical facilities, and a school for children. Respondents also emphasized that support should benefit all members of the community and that the amount should be sufficient to enhance their livelihoods and to prevent people from engaging in the extraction of different products from the forest. The above findings suggest that AIGA support should be guided by an assessment of the specific needs of each community, and that this could help to reduce resource dependence and enhance the livelihoods of local people.

Furthermore, my household survey results show that the perceptions of local people towards co-management are generally very positive. However, most respondents felt that CMC leaders and IPAC team members have a poor relationship with community members, and that their efforts for awareness-raising and motivational programs were not sufficient to engage the whole community in effective co-management practices in RKWS. While key informants and the GD and FGD participants were generally aware of co-management, many local people were not, as revealed by the household survey data, which showed that only seven of the 20 respondents had any clear



knowledge about co-management. Of these seven, three had a good understanding of co-management because they are members of the CMC. Despite the fact that co-management is not well understood by the remaining 13 of the household interview respondents, when I explained the concept to them their attitude towards co-management was positive.

Among the 20 participants of the key informant interviews, GDs, and FGDs, all acknowledged that there is a strong relationship between the FD, the IPAC project team, and the CMC leaders. Most of the key informants and the GD and FGD participants confessed that the CMC leaders and the IPAC team have poor relations with the community people and with local grassroots organizations. On the other hand, all of the household survey respondents admitted that they have good relations with the FD since they are “forest villagers,” they feel they have to give support to the FD for patrolling and plantation work. This difference between the views expressed by the villagers and the other respondents could be due to the fact that the villagers have a more direct (legally binding) relationship with the FD and IPAC staff, which has a direct bearing on their livelihoods.

Based on the above findings, my recommendation is that, in order to build more interest in co-management and to improve co-management practices and relations, there should be more interaction between the IPAC team and the CMC leaders on the one hand, and the grassroots-level organizations and community people on the other hand.

My results from the key informant interviews, GDs, and FGDs show that all respondents felt that the institutional sustainability of the CMC is tenuous. They attribute this to insufficient AIGA support for local residents, limited interaction with community members and grassroots organizations by the CMC leaders and/or the IPAC project team members, and a lack of road connectivity and other infrastructure to promote eco-tourism. Earnings from eco-tourism activities provide 50 percent of the CMC’s total revenue, so the more income obtained from eco-tourism, the more resources the CMC will have to invest in improving PA management and enhancing the welfare of the local community. In this regard, an increase in the benefit-sharing ratio from eco-tourism from 50 percent to 75 percent could also have a significant impact on the sustainability of the CMC.

The survey also revealed that, out of the 18 combined individuals and groups consulted, 16 mentioned that a lack of awareness and motivation programs, and an insufficient amount of small, low-interest loans could lead to the unsustainability of the CMC. If people benefit from co-management activities, they will engage more actively with the CMC, thereby promoting its institutional sustainability. Results also showed that, of these individual/group respondents, 13 to 15 mentioned a lack of a fixed income source like an endowment fund (money deposited in the bank as a fixed deposit for earning interest regularly) for PA development and conservation measures,

or enrollment funds (no-interest fixed-term loans provided by donors or the government) for livelihood development; insufficient policy and legal instruments; and a lack of monetary support to CPGs for their services. All of these also have implications for the sustainability of the CMC. Finally, of the 18 individual/group respondents, only two (FGDs) mentioned the lack of a monitoring policy of the CMCs for CPGs, VCFs, and PFs as a significant factor affecting their sustainability. The various issues that participants cited as threats to the sustainability of the CMC are provided in Table 2.

Table 2: Issues cited as threats to the institutional viability of the CMC

Reason	Respondents		
	KI (n = 4)	GD (n = 4)	FGD (n = 10)
Insufficient policy and legal instruments for CMC empowerment	2	3	8
Insufficient AIGA support	4	4	10
Lack of fixed income sources for livelihood development, PA development, and daily expenditures of those working for conservation	4	2	8
Lack of awareness-raising and motivation programs	4	4	8
Insufficient small/low-interest loans and endowment/enrollment funds	4	4	8
Lack of a monitoring policy of CMC for CPG, VCF, PF activities	0	0	2
Lack of monetary support to the CPG for their services	4	4	7
Lack of interaction with community members and grassroots organizations	4	4	10
Lack of road connectivity and infrastructure development to promote eco-tourism	4	4	10
Benefit-sharing ratio from eco-tourism must be increased (e.g. from 50% to 75%)	0	0	2

NOTES: KI = key informant interview; GD = group discussion; FGD = focus group discussion

Conclusion

Over the past two decades, co-management strategies have been implemented throughout the world as a natural resource conservation tool. Their main impetus has been to engage local people as partners in resource protection. However, co-management is very site specific, and each country must develop its own implementation strategy. In some South Asian countries such as Nepal, India, and Sri Lanka, a number of co-management initiatives, such as buffer-zone management committees, joint forest management, community forest management, and others, have proven to be effective tools for the sustainable management and conservation of forests and protected areas.

In Bangladesh, which piloted co-management strategies under the Nishorgo Support Project from 2004–2009, many relevant lessons have been learned. The long-term success of co-management of PAs in Bangladesh will depend on effectively internalizing the lessons from such pilot projects. However, sustaining co-management organizations and deriving maximum benefits from natural resource



conservation has proven to be a huge ongoing challenge for the Forest Department after completion of their project interventions. Some additional measures are needed to ensure the long-term sustainability and effectiveness of co-management at RKWS and other protected sites. Based on the findings of this study, I recommend the following actions and strategies be pursued to ensure the viability of key co-management institutions and outcomes at RKWS, and their replication in other forest protected areas of the country:

1. Ensure the involvement of local communities in the management of forest protected areas as a solution for protecting natural resources;
2. Provide more AIGA activities according to community needs and an assessment of their dependence on the PA;
3. Create an endowment fund to provide regular income for the administrative costs of the CMC, and to promote sustainable PA management and community development;
4. Ensure good road communication and eco-tourism facilities to encourage tourists;
5. Facilitate greater interaction among co-management decision-makers, grassroots-level organizations, and community people;
6. Develop a clear monitoring policy of CMCs for CPGs, VCFs, and PFs; and
7. Establish a clear legal basis for co-management.

The outcomes and shortcomings of co-management practices in existing pilot sites can lead policymakers and other stakeholders and proponents of co-management to a fuller understanding of the suitability and applicability of specific co-management strategies in other PAs. Ultimately, the long-term viability of co-management organizations and the effective replication of co-management strategies in other protected areas depends upon the implementation of these lessons learned from past experiences, as well as on garnering political and legal support and sufficient financial flows.

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Appendix I: Checklist of questions for key informant interviews

1. What benefits did the community receive due to co-management?
2. What are the perceptions of local people about co-management?
3. What benefits did/do community members receive from Nishorgo/IPAC activities?
4. What types of AIGAs do community people need?
5. Do you think resource degradation in the PA is decreasing?
6. Do you think IPAC team members, co-management councils, and FD staff members have very good relations?
7. Do you think they (IPAC team members, co-management councils, and FD staff) have enough communication with the CPGs, PFs, VCFs, youth clubs, etc.?
8. What are your perceptions about the Nishorgo Network?
9. What are your suggestions for sustaining CMC?

Appendix II: Open-ended questionnaire for household surveys

1. Did you get any benefits from the NSP/IPAC projects?
2. Do you have any idea about co-management? Are you interested in co-management?
3. What additional benefits - AIGA or others - did you receive from co-management?
4. How can local people benefit more from co-management?
5. Are there any (communication) linkages among the members of the CMC and the members of the VCFs, PFs, youth clubs, and CPGs?
6. What are the roles and interests of the major actors in PA management (FD, IPAC team, CMC)?
7. Have you had any involvement in PA management? To what extent?
8. Do you think the degradation of resources from PAs is decreasing?
9. Is there any conflict among the FD, the IPAC team, and CMC members?