**Video-mediated dialogue for promoting equity in protected areas conservation**

Authors: Jayalaxshmi Mistry (corresponding author), Deirdre Jafferally, Sean Mendonca, Rebecca Xavier, Grace Albert, Bernie Robertson, Ena George, Ryan Benjaminand Lisa Ingwall-King

Supplementary Material 1. Description of each protected area

Iwokrama Forest

Iwokrama Forest was established in 1996 with considerable funding from the United Nations Development Programme (UNDP), as well as the UK’s Department for International Development (DFID). At the time, there was little consultation with the Indigenous residents and rights holders of the land (Allicock, 2003), but soon after Iwokrama helped to establish the North Rupununi District Development Board (NRDDB), a community-based organisation representing the communities of the North Rupununi. In 2005, Iwokrama signed a collaborative management agreement with the NRDDB (revised in 2008, 2013, 2016 and currently under revision), which aimed to improve the scope, reach and status of joint undertakings and enterprises and to formalise the objectives and relations between the two parties. With considerable external funding, Iwokrama was extremely active in the communities, undertaking both ecological and social research, establishing and maintaining wildlife clubs for children, and holding large events, such as the annual Wildlife Festival. It helped to establish ecotourism in the region, through its River Lodge on the banks of the Essequibo River, and partnering with the NRDDB and individual villages to develop resorts and attractions, such as the Canopy Walkway. There is a Forest Conservation User fee of US$15 per person (one‐time charge), paid by all visitors who over‐night in the protected area, part of which is paid to the NRDDB for use in community development (Iwokrama International Centre, 2020).

The Iwokrama Forest is zoned into two distinct areas: the Wilderness Preserve (WP‐ 187,175 ha) and the Sustainable Utilization Area (SUA‐ 184,506 ha). The WP is set aside as a biodiversity reserve, wherein all activity is severely restricted. The SUA is available for multiple uses including Iwokrama’s timber and tourism businesses. The village of Fair View is the only Indigenous community within the protected area. In 2006 it received land title to 21,950 hectares of the Iwokrama Forest within the SUA zone and is managed through a special collaborative management and benefit‐sharing agreement (revised in 2018). The other communities lying south of the protected area in the North Rupununi are mostly located in the savanna area. These Indigenous communities maintain traditional legal rights to all the resources of the Iwokrama Forest for non-commercial purposes.

In 2007, Iwokrama began timber operations to demonstrate the wise use of forest resources through low-impact harvesting. This Phase I aimed to study forest dynamics, inventories, community engagement and forest certification to improve operations and forest management in Phase II. A benefit sharing agreement was established with the North Rupununi District Development Board (NRDDB), outlining how much they would receive from the sale of the timber. However, following a disagreement, the company was dissolved. In January 2014, Iwokrama began Phase II of its sustainable timber harvesting operation with the private company Farfan and Mendes Limited (FML). After a dispute in May 2020, a new agreement was signed with Evergreen Forest Products Inc. to harvest a maximum of 1,650 ha per year (less than 0.5% of the Iwokrama Forest) using reduced impact logging techniques. In 2019, of the 50 timber operation employees, 30 were from the NRDDB communities. Iwokrama maintains a wood supply policy with communities that outlines the procedure for communities to procure sawn wood from the Iwokrama Forest. The benefit sharing from timber agreement was never renewed after the Phase I operation.

Since 2009, Iwokrama has also been a partnering organisation in the climate and forest partnership between the Government of Guyana and Kingdom of Norway under the UNCCC REDD+ programme (Laing, 2018). Working with the North Rupununi District Development Board (NRDDB) and the Global Canopy Programme, they piloted a Community Monitoring, Reporting and Verification (CMRV) system in the North Rupununi communities. However, there has been slow progress in the development of a national REDD+ system, with inadequate processes for Free Prior Informed Consent (FPIC) with Indigenous communities and outstanding land tenure issues (Benn et al., 2020; Hook, 2020).

Iwokrama International Centre is an international not-for-profit organisation, governed by an International Board of Trustees who have ultimate responsibility for its management. The Board determines the policies and priorities of the Centre, appoints the CEO and plays a substantial role in fund‐raising. It is managed by a team of around 15 seventy permanent staff; no North Rupununi District Development Board (NRDDB) community members work in the head office in Georgetown nor have held a senior position, but approximately 30 people work at the River Lodge and Research Centre within the Iwokrama Forest including Indigenous cooks, rangers, tourist guides and maintenance staff.

Since its inception, the North Rupununi District Development Board (NRDDB) has evolved to play an important role as a representative, umbrella organisation for the communities of the North Rupununi. Its core membership consists of the legally elected leaders (Toshaos and Senior Councillors) of 20 North Rupununi communities. Its elected executive committee is comprised of a Chairperson, Vice Chair, Treasurer, Secretary and Secretary Treasurer. It is involved in governance and management issues at the local, regional and national level, supports tourism and other business initiatives in its constituent communities, undertakes research in collaboration with national and international organisations, and supports teaching and learning through a dedicated youth centre. The NRDDB holds two‐day, statutory meetings once a quarter; the first day for communities and the second for partners, such as Iwokrama. These forums are an opportunity to raise concerns related to the protected area, although Iwokrama does have a formal complaint, conflict and dispute resolution procedure that starts with the NRDDB and can lead to the Court of Law if unresolved. A previous complaint for wrongful dismissal of Indigenous staff led to Iwokrama convening a grievance committee and following due process. No disputes were filed in 2019 (Iwokrama International Centre, 2020).

Kanuku Mountains Protected Area

The Kanuku Mountains Protected Area (KMPA) was created in 2011, following the passage of the Protected Areas Act 2011. The Protected Areas Commission (PAC), established in 2013, is mandated to manage, promote and expand the national protected areas system in Guyana. It is partly supported by the Protected Areas Trust (PAT) whose funds provide co-financing for management activities in all protected areas except Iwokrama Forest.

The process for establishing KMPA was facilitated by Conservation International-Guyana and involved participation from a core group of stakeholders, regional and state entities, non-governmental organisations and representatives of 21 adjacent communities, the traditional rights holders of the land. Currently no titled Indigenous land falls within the boundaries of the protected area, although there has always been customary use of the area. The Kanuku Mountains Community Representative Group (KMCRG) was established in 2006 (with support from Conservation International-Guyana) and is comprised of leaders of the 21 main Kanuku Mountains villages. It continues to represent the communities in the participatory management of the KMPA, and is funded through various means including the PAC and Ministry of Amerindian Affairs. It holds two day quarterly meetings - day one for discussion of community business and day two for partners and other stakeholders - and has an office in the regional administrative town of Lethem.

The management structure of the Kanuku Mountains Protected Area (KMPA) comprises of the Protected Areas Commission (PAC), which is governed by a Board of Directors, and a Site Level Authority (SLA). This SLA is not yet in place, but will function in an advisory capacity and comprise of both public and private stakeholders including Indigenous and local representatives. Currently only the rangers are operating on site. In 2015, the PAC published a five-year (2015-2019) management plan which provides detailed information on KMPA activities and implementation, together with monitoring and evaluation indicators. The Covid 19 pandemic has delayed the assessment of this plan, and subsequent management planning.

Kanashen Amerindian Protected Area

In 2006, the community of Kanashen (Masakenarî) declared their 648,567 ha of titled land as the Kanashen Community Owned Conservation Area (KCOCA) under the Amerindian Act of 2006, and drafted village rules for its management. At the time, the community also declared their intention to form part of the national system of protected areas. With technical help from Conservation International-Guyana, they submitted a draft management plan and application to the government in June 2013. In 2017, following the finalisation of a five-year (2017-2021) management plan (Kanashen Village, 2017), they were established as the Kanashen Amerindian Protected Area (KAPA). As well as activities that manage and monitor the KAPA, such as rangers, equipment and technical skills, their management plan has a significant emphasis on their traditional knowledge and practices, with specific objectives to strengthen these.

The governance structure of the Kanashen Amerindian Protected Area (KAPA) comprises the established system of village governance through the village toshao (leader) and Village Council and the KAPA rangers. This KAPA Management Team (KMT) implements the day to day activities of the management plan. The rangers report monthly to the Village Council, and the Protected Areas Commission (PAC) supports KAPA Management Team by applying for funds through the Protected Areas Trust. These funds are essentially for ranger salaries and conducting river patrols and monitoring activities in the KAPA. The Village Council handles most conflict situations, but in cases beyond their control, communicate with the PAC.

Supplementary Material 2. THE PROCESS OF SCREENING PARTICIPATORY VIDEOS TO DECISION-MAKERS

The screening began with a discussion amongst us, the facilitators (the authors), to clarify any issues or themes arising from the community videos, and to identify any implications for the screening. In particular, we asked ourselves the following questions adapted from Shaw (2017): What is the purpose of the engagement? Were we aiming to connect decision-makers with realities, deliver a message, provoke them to think, or inspire them to act? What was most appropriate to show given the communication purpose? How will we invite people and frame the engagement purpose so that they are motivated to come and know what to expect? Are there likely to be negative or unexpected reactions in this context? How will we alleviate the risks to vulnerable participants? How will we contextualize the context and the processes used to produce material to aid understand and conviction? How will we prepare audiences, so they know we are initiating exchange rather than providing solutions?

This led to the development of a screening schedule to make sure the roles and responsibilities of the facilitators, and messages conveyed were clear. We also developed a series of questions that aimed to document and assess current knowledge and opinions of the topics and themes of the videos by decision-makers. This pre-screening questionnaire was sent out in advance of the agreed screening event.

In-person meetings took place with staff members of the relevant protected areas management authority and Ministry of Amerindian Affairs (MoAA). These lasted for 2-3 hours, and began with a short introduction to the larger project, the purpose of the screening (to build mutual understanding of issues/concerns, and inspire them to act on the videos), and an outline of the process. Participants were given the opportunity to ask questions, and consent was requested to record the screening discussions and follow-up filming of responses.

In order to get decision-makers familiar with the participatory video process, a short exercise of holding a video-camera and taking some footage was facilitated. The focus of this exercise was for decision-makers to introduce themselves, talk a little about what they do in the institution, and what they know about traditional knowledge and conservation. Community videos were then screened one at a time to allow discussion in between. Participants were provided with a sheet of questions to help guide thinking as they watched and listened to the issue(s) and views of those documented in community videos. These were: What do the video materials show you? What are the key messages? What did you feel watching it? Do any of these stories challenge your assumptions about traditional knowledge and / or the management of protected areas? Is more information needed to help your understanding of the issues raised? What are the possible lessons for policy makers or programme leaders? What steps are needed to build better collaboration with the communities and what obstacles do you see that would prevent that from happening?

Supplementary Material 3. Links to participatory videos

Iwokrama Forest associated community videos: <https://communityownedsolutions.org/video-post/traditional-practices-supporting-management-of-the-iwokrama-forest/>

<https://communityownedsolutions.org/video-post/change-in-traditional-knowledge-and-forest-conservation-iwokrama-forest/>

<https://communityownedsolutions.org/video-post/challenges-to-managing-the-iwokrama-forest/>

Kanuku Mountains Protected Area (KMPA) associated community videos: <http://communityownedsolutions.org/video-post/traditional-practices-supporting-the-kanuku-mountains-protected-area/>

<http://communityownedsolutions.org/video-post/challenges-to-managing-the-kanuku-mountains-protected-area/>

<http://communityownedsolutions.org/video-post/changes-in-traditional-knowledge-in-the-kanuku-mountains-protected-area/>

Kanashen Amerindian Protected Area (KAPA) community videos: <http://communityownedsolutions.org/video-post/impacts-of-change-to-traditional-knowledge-on-conserving-kanashen-amerindian-protected-area/>

<http://communityownedsolutions.org/video-post/future-challenges-to-managing-kanashen-amerindian-protected-area/>

<http://communityownedsolutions.org/video-post/traditional-knowledge-and-kanashen-amerindian-protected-area/>

North Rupununi District Development Board (NRDDB): <https://communityownedsolutions.org/video-post/strength-in-partnership-the-nrddb-and-iwokrama/>

Kanuku Mountains Community Representative Group (KMCRG): <https://communityownedsolutions.org/video-post/building-sustainability-together/>

Iwokrama Response Video: <https://communityownedsolutions.org/video-post/iwokrama-response-video-to-north-rupununi-communities>

Kanashen Amerindian Protected Area (KAPA) Management Team Response Video: <https://communityownedsolutions.org/video-post/kanashen-response-video-to-masakenari-community>

Supplementary Table 1. Summary of important information related to each of the protected areas.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Year officially****established as****a protected area** | **IUCN protected area****category** | **Size** | **Biodiversity features** | **Number of****associated****Indigenous****villages****(including****satellite****villages)** | **Indigenous****groups****represented** | **Estimated****number of****residents****from villages****affiliated****with protected area** | **Governance****system** | **Support****organisation(s)** |
| Iwokrama Forest | 1996 | Category VI: Protected area with sustainable use of natural resources | 371,000hectares | Mainly lowland tropical rain forest. Supports endemics including the White-collared Swift (Streptoprogne zonaris), Orange Breasted Falcon (Falco deiroleucus) and the Guianan Cock of the Rock (Rupicola rupicola) | 20 | Makushi (majority)Wapishana | ~5,300 | Iwokrama Act 1996 | Iwokrama International Centre for the Rainforest Conservation and Development (Iwokrama); North RupununiDistrict Development Board (NRDDB) |
| Kanuku Mountains Protected Area | 2011 | Category VI: Protected area with sustainable use of natural resources | 611,000hectares | Mainly mixed tropical forest divided into gallery, hill and cloud forest. Over 400 species of fish, 643 species of birds such as the red siskin (Spinus cucullata) and Rio Bronco Antbird (Cercomacra carbonaria)  | 21 | Wapishana (majority)Makushi | ~12,400 | Protected Areas Act 2011 | Protected Areas Commission (PAC); Kanuku Mountains Community Representative Group (KMCRG); South Central Indigenous Peoples' Development Association (SCPDA); South Rupununi District Council (SRDC) |
| Kanashen Amerindian Protected Area | 2017 | Category VI: Protected area with sustainable use of natural resources | 648,567hectares | Mainly lowland tropical rain forest and riparian habitats. Supports endangered and vulnerable species such as tapir (Tapirus terrestris), jaguar (Panthera onca), giant river otter (Pteranura brasiliensis), bush dog (Speothos venatucus) and several species of primates. | 1 | Wai Wai | ~224 | Protected Areas Act 2011. Legally protected as a Amerindian Protected Area | Kanashen Village Council; Protected Areas Commission (PAC) |

Supplementary Table 2. The main themes arising from the community participatory videos.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **North Rupununi**  | **Kanashen** | **South-Central Rupununi** |
| **Themes** |  |  |  |
| Communities manage the protected area through their traditional knowledge on sustainable resource use  | “*Amerindian always be friendly to the forest because it’s their home. The real strength of the Amerindian people, they don’t destroy the forest. Capital for the most forested area in the North Rupununi. Have contributed a lot to the Iwokrama Forest in helping to protect it*”. | “*The traditional activities that are allowed in the protected area are fishing, hunting, farming and also collecting medicines, in order to maintain our family livelihood in a sustainable way*”. | “*When farming in KMPA* [Kanuku Mountains Protected Area]*, we show, tell the young generation how to farm in small size within the protected area so they won’t be able to destroy the forest and not making use of it. The other thing, if there are useful trees within their farm, it can be extracted and used for house materials and other purposes. In that way, we will be able to manage KMPA*”. |
| Importance of language and practicing traditional activities to protect biodiversity | “*Need to have program for children to teach language, traditional craft. Ways of fishing, hunting… sustainable use of forest, not cutting of loo trees. Need to start using back the original names of the locations in local names; Makushi and Wapishana*”.“*It helps to communicate with each other, and we will help to encourage one another about the importance of the forest, using our own language, to young children, with fore parents. Able to know how to care our forest. Reaching out and talking using the language is important*”. | “*We continue to practice our traditional knowledge by keeping our traditional Indigenous language and sustainably manage our forest biodiversity and other ecosystems. We still keep our traditional culture e.g. hunting, fishing and gathering, still living our way of life*”. | “*With the protected area, our language can be strengthened to help manage the protected area. Speaking our language, we would be able to voice out our concern and represent our self as the Wapishana people. If we don’t speak our language, we would find ourselves giving up easily. If we keep our language strong, we would we be able to manage our KMPA* [Kanuku Mountains Protected Area]*”.**“With our language we can help to manage the KMPA. By knowing the names of mountains, all the resources found within KMPA, medical plants and trees in our language”.* |
| Community members not using traditional methods of resource extraction and/or abiding by community rules | “*People are using traditional knowledge but some in the community are using seines for fishing, guns and traps for hunting, shooting more animals in using these equipment*”.  “*As Amerindians within the community, we also need to look at responsibility to ensure that we continue to do sustainable activities and should adhere to rules and regulation*”. | “*If people do not use resources wisely it can change our way of life*”.“*Like in 2009, people didn’t really use chainsaw, they use axe. But today every household has a chainsaw so you see it changing*”. | “*They have adapted a new method of fishing. They using the seine, dragnet, cast net, drift seine, tangle seine, and very seldom would you find the use of the bow and arrow. So that has changed. The hunting has also change because they no longer using the arrow and bow to go hunting, they are using firearms*”. “*The changes in the methods can affect the KMPA* [Kanuku Mountains Protected Area] *in many ways, for example, people start introducing guns for hunting and they don't have limit to how they hunt. These animals can become extinct if they don't limit how they hunt*”. |
| Not enough information / outreach about protected area | “*For managing the protected area, I don’t know what is happening at the present management. I could remember the times of Graham Watkins* [Director from 2003-2004]*, then were the manager of the Iwokrama reserve. There were a lot of field trips*”.“*Not much interaction at this time like before. Kind of slow, no regular information sharing*”. | “*In order to manage our protected area well, the Toshao, the village council and the KAPA* [Kanuku Mountains Protected Area] *manager and the rangers have to make sure all the villagers in the community know about the rules and regulations and how to use and preserve our resources and ecosystem within the protected area in a sustainable way*”. | “*It's .. how you organize, how you go about consulting the areas or the villages, communities existing nearby. I think that is one of the challenges upcoming because we need more consultation with villages so that they can understand what a protected area really is. Sometimes, especially the elders folks, they might not understand, they might think what they use to do in previous times they cannot do*”. |
| Lack of finances, and rangers / patrols / employment / training / monitoring |  “*More funding to run the Iwokrama Forest. With no funding-no works- if there is more funding, will have more rangers to patrol, communication- must be well equipped with communication tools. Few cameras to get evidence*”. “*Not as before, financial constraints. No regular visit of people like before, wildlife club (no funding) to continue. No employment like before*”. | “*The challenges that the protected area may face in the future are if there is no income coming into the protected area, the rangers and the monitors would not be willing to do their responsibilities voluntarily*”. | “*The biggest challenge first of all is to have financial resources, because to manage the protected area, you need to have a lot of funds to mobilize people, you have to get more rangers trained, you have to get infrastructure, you have to get a ranger’s hut being established, you have to get a research centre established, you have to get infrastructure. I'm referring to both, vehicles transport, four-wheel transport, also with outboard engines. That is the big challenge*”. |
| Require greater Indigenous involvement within management / senior staff positions in protected area authority | “*For successful management of Iwokrama, need to have a cadre of young people, qualified trained Amerindians in the top bracket of the management of Iwokrama, because I have seen some successes in the past but not major successes, because the management was made by expatriate, qualified people. The Amerindian people were engage as rangers or down…….when they return from studies, they can be able to interact with local communities / people, especially the old generation where there is the hidden knowledge……..for example if you are from the coast, it will be difficult to penetrate the information from the old folks, because the language will be the barrier*”.“*Needed local people who knows about the Iwokrama Forest, working there. Monitoring is not up to date, lack of monitoring. Rangers not being properly trained, people from outside being employed who doesn’t know the forest*”.  | n/a | “*Cooperation is needed…. especially the leaders and the people... as well as workshops that will enlighten people. And we need to hear from more than one* [set of] *people – we need to hear from the Village Council also*.” |
| External people / commercial activities leading to overharvesting /damaging of resources such as fish, game, timber | “*Road access through the protected area, truckers walk with personal firearms and would go shooting at nights for animals. Need to look into these issues so we can do awareness about what is happening in the areas*”.“*Not the same as before, because of the road, use the animals, fishes for commercial use. Use of vehicles to transport to get it out there*”. | “*We have the road coming from the savanna to our community. I think more people will come to our protected area to fish, do mining and sometimes they will not want to obey the village rules. Why I am say this is because it has already started*”. | “*People from outside coming and cut wood and not only that too, especially like now sometimes we get, outside people them setting fire in the mountain and which is not we, and where the fire will destroy every little animals in the mountains and we cannot find them more later*”. |
| Issues with the protected area leadership | “*The current leadership doesn’t think the same like previous leadership. They think differently and acts differently. That would be something that Iwokrama will have to think about*”.“*Management of the Iwokrama keep changing and is not run like previous. Previous management run the Iwokrama in a good way*”. | “*If the Toshao and the village council and the KAPA* [Kanuku Mountains Protected Area] *Manager and the rangers do not carry out their responsibilities or fail to manage the area how it should be, the protected area will face challenges in the future*”. | “*The biggest challenge right now is to have a site level management team in place. The Commission has been trying since last year to put the team in place. They have ask the KMCRG* [Kanuku Mountains Community Representative Group] *board to submit five names. I don't know if these names were submitted up to date*”. |