

# Representation: Who speaks for whom in citizen-driven research?

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*Paper presented at the Xth Meeting of the International Association for the Study of Common Property, 9-13 August, Oaxaca, Mexico*

Keywords: Representation, citizen science, participatory action research

## Introduction

Growing interest in civil society-based approaches to science (Yankelovich 1991, Fairhead and Leach 2003) suggests a need for broader participation by different interest groups in the production of knowledge for natural resource management. Yet where people manage their resources collectively, questions arise about who should participate in the production and management of knowledge (Munton 2003). Little attention is usually given to the extent to which individuals represent the interests of others not present in the process. Representation in this context has a dual significance that is often not acknowledged. Participants not only help represent the knowledge and interests of a larger group, but also presumably act on behalf of a constituency in a governance sense.

In this paper, we examine how these dual functions of representativeness and representation occur in practice. Using examples from action research in Malinau, Indonesia, we describe the local political culture of representation and the challenges this poses for citizen-driven research. We then describe different efforts to facilitate improved representation and representativeness and their outcomes. We reflect critically on our own role as facilitators in bringing western scientific, participatory development and democratic assumptions into these processes. We conclude with some principles for guiding groups in their choice of representatives and their responsibilities.

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<sup>1</sup>The work described here is the result of the collective effort of our core team, which includes, in addition to the authors above, Godwin Limberg, Ramses Iwan, Njau Anau, Moira Moeliono, Made Sudana and Steve Rhee. Discussions with Cynthia MacDougall substantially informed our conceptualization of representation and how to evaluate it. Jon Corbett inspired and helped shape our approach to participation. We usually publish papers with the names of all team members because of the highly interdependent nature of our work, but could not do so here, because of the nature of the IASCP conference requirements.

## **Participation is political**

There is growing acknowledgement that different types of knowledge about the environment exist and that bringing these forms of knowledge together in environmental decision-making is technically effective and politically desirable (Berkhout, Leach and Scoones 2003). Efforts to merge different types of knowledge have focused on participatory methods such as participatory action research (PAR) to give voice to different group's interests and link their knowledge with "scientific" observations. In PAR, people engage in iterative cycles of trial and reflection to bring about a desired change. Research occurs in the design of the trials and in the critical reflection about the process and results. Participants in the research may plan and make decisions about the cycles, implement the cycles, provide data, interpret data, manage and design the study (Dick, 1997). Participants are the people who expect to benefit from the research and action.

Who participates in these processes, however, has important political implications (Peters 1996, Leeuwis 2000). Participants act to different degrees as representatives of a larger community of local people or resource users. The extent to which their knowledge represents the knowledge of others affects the relevance and generalizability of the research and action. Facilitators of PAR commonly work to select the relevant stakeholder groups (Colfer et al. 1999), identify the people with the most relevant knowledge (Davis and Wagner 2003), or involve a statistically sufficient sample of the population. In these instances, representatives "stand for" others (Bogdanor 1987: 531) in a symbolic and statistical sense. In "standing for" others, a representative shares some defining characteristics of their constituency. The ideal is to be "...an exact portrait, in miniature, of the people at large, as it should think, feel, reason and act like them" (John Adams, quoted in McLean 1996: 428).

Too often, however, participants have their own agendas (Clever 2001) and disguise their motivations (Cooke and Kothari 2001). What and whom they stand for may be fluid and context dependent (Li 1999). Decision-making by symbolic representatives is done in a personal capacity, with resulting questionable public legitimacy and an unclear relationship to resulting public choices (Steelman and Ascher 1997: 74). Over time, participants may become part of a specialized class who receive extra remuneration or opportunities for travel or networking, and seek to perpetuate the relationship at the expense of genuinely representing their community's interests (Edmunds and Wollenberg 2001). Outside organizations seek representatives who best fit their ideal of good partners and in turn empower or entice them to meet the outside group's interests (Tsing 1999).

A second aspect of representation is therefore needed, which is to "act on behalf of" others (Bogdanor 1987: 531, Wester 2003) in the democratic governance sense. The representative who acts on behalf of others has responsibilities to a specific constituency. Drawing from classic conceptions of representation in political science (Pitkin 1967, Pateman 1970, McCrone and Kulinsky 1979, Eulau and Wahlke 1978, Gutmann and Thompson 1996, Bohman and Rehg 1997), Acting on behalf requires clarity about (1) who is the constituency; (2) whether the constituency has chosen the representative freely; (2) the constituency's expectations about the representatives'

responsiveness to them<sup>2</sup> and the leeway the representative has to act independently from the constituency (Rao 1998); (3) how the representative aggregates different points of view through, for example, voting with majority rule, consensus building or working with only one element of the constituency (Haraway 1991), (4) the effectiveness of the representative in conveying and negotiating the group's interests, and (5) checks and balances on the accountability of the representative to their constituency, i.e., how much power do representatives wield and how to create incentives to make sure they use it in the interest of the constituency? (Ribot 2001). Even where representation occurs, it rarely reaches these ideals, however. Representation is inevitably partial and situated in a time and place. We agree with Bickford (1998) that only "the act of representation determines what is represented" (p. 94). The use and production of knowledge becomes not just a matter of experts making decisions from facts, but of representatives (who may still be seen as specialists or elite) taking into consideration the views of others to inform their own judgments (Arendt, cited in Yankelovich 1991: 229).

Citizen-based science<sup>3</sup> is thus not just about getting citizens to participate in producing knowledge or about getting the right mix of people from the relevant interest groups. It should be about linking participants to local political associations and acknowledging the way in which they are affected by political processes (Peters 1996). If we accept that power and knowledge are interdependent, governance principles should inform who participates in knowledge production and how they do it. A key question is *which* governance principles or practices should people use?

If we are interested in pursuing citizen science and democratic principles of self-determination and representation (constructs themselves situated in their own history, identity and power politics), we assume that citizens should have a role in producing knowledge and making decisions about natural resources. As it is difficult for all citizens to participate all the time, representatives act on their behalf, following the criteria set out above. Where representatives do not meet the criteria above, we assume they are only standing for others and their input or decisions are nonbinding (Steelman and Ascher 1997: 71). If we are interested in genuine citizen-based decision-making, and representatives' knowledge is to contribute in a responsible way to real impacts on people's lives, there is a need for more acting on behalf and not than just standing for the identity of a group. We distinguish in the rest of the paper between the act of *representation* and symbolic *representativeness*.

Several tensions keep citizen-driven science based on the ideal of representation from being realized. First is the division between specialized elites—especially "scientists," "development experts" or "officials"—and "lay people" (Yankelovich 1991, Cooke and Kothari 2001). Elites tend to control knowledge and decision-making, with their role justified in terms of the need for specialization of roles, apathy of the public or the lack of an informed and capable public. These are the groups who facilitate and usually control citizen participation in knowledge production. Closely related is the division between different forms of knowledge and the degree to

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<sup>2</sup> Responsiveness carries the double responsibility of knowing what the constituency wants, as well as exercising voice, influence and authority to make decisions according to what they want (Schumaker 1991, Rao 1998).

<sup>3</sup> We use science in the broad sense of a systematic way of producing "better accounts of the world", (Fortmann pers. comm., citing Donna Haraway (1999:182) ).

which the different groups accept them as legitimate and use them: (1) the empirical-analytical or what is commonly thought of as “objective” science; (2) intersubjective knowledge based on interpretation that enhances human communication and understanding; and (3) emancipatory knowledge, which empowers people through critical self-reflection by freeing them from hurtful ideologies and prejudices (Habermas 1968, cited in Yankelovich 1991: 213). Knowledge tends to be more tacit and produced through practice, in contrast to western models of knowledge where more is recorded and expressed through language (Mohan 2001). Third is that people resist merging different forms of knowledge based on their comfort with existing ways of doing things, seeing anything else as extra work (Yankelovich 1991: 179-189).

As a result of these tensions, we suggest facilitators of citizen-driven science often err towards seeking representativeness rather than representation, leaving decision-making in the hands of elites. Conventional researchers find themselves beholden to empirical models of knowledge based on statistical representativeness and the need for rigorous, consistent comparisons among groups. They control the science aspects of knowledge production, treating citizens and their actions as subjects or objects. Professional facilitators and many development practitioners find themselves beholden to outside agendas. They try to control more the intersubjective and emancipatory types of knowledge to meet this agenda (Tsing 1999). They control participation among different groups to best represent diverse interests, ensure appropriate authorities are present and avoid social jealousies.

Our purpose here is to highlight the importance of improving representation and describe the realities of representation to show the practical difficulties in achieving it. We show the dilemmas in trying to balance representation and representativeness. We do this from the perspective of an international research center, the Center for International Forestry Research (CIFOR), based in Bogor, Indonesia. As such, we are prone to the tendencies of both the researcher and the development facilitator described above and provide a self-critique. We do not claim to have achieved citizen-driven science, but do feel some of our experiences can inform it. Our findings draw upon surveys, key respondent interviews and direct observations in the context of participatory action research (PAR) in community forest management that we have conducted from 2000 to 2004 in Malinau, East Kalimantan (Indonesian Borneo).

## **The practice of representation in Malinau**

### *Malinau*

The Malinau River watershed is the most densely populated and most developed area of the Malinau District<sup>4</sup> in East Kalimantan, Indonesia. About 6,673 people reportedly live in the watershed (Voting Census data April, 2003), distributed among 21 settlements with 15 to 997 individuals each. At least eleven Dayak ethnic groups live in the watershed, with the Merap having had historical control over the territory

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<sup>4</sup> The district of Malinau itself was formed in October 1999 when the district of Bulungan was carved up into the districts of Malinau, Nunukan and Bulungan.

in the last century, the Kenyah groups having current political control (and largest population), and the partly hunter-gatherer Punan being the most marginalized groups politically. Individuals from Sulawesi, Flores, Java, Sumatra or elsewhere in Kalimantan have also settled in the area, often with significant local influence because of their education, broader experience and initiative. Due to government resettlement programs, villages composed of one ethnic group are often clustered in one location with villages of other ethnicities. In the upper Malinau, nine such settlements existed in 2003, with two to four villages in each location. A village head (*kepala desa*) runs the village. The village head is selected by the community, ostensibly by popular vote, and paid by the district government.

Malinau is interesting for its extent of Dipterocarp forest and the competition among groups, including local government, the national Department of Forestry, remnant Tidung sultanate groups, entrepreneurs (from Malaysia, Singapore, China), the World Wide Fund for Nature-Indonesia and CIFOR to influence or control benefits from these forests. Ninety-five percent of the district is state forest land (Barr et al. 2001), and the area comprises one of the largest remaining contiguous forests in Asia. Villages tend to manage forests within their territories as customary (*adat*) common property, but the government has thus far refused to recognize these boundaries. The district government, empowered by decentralization policies in 1999, engaged in small-scale logging under arrangements known as *Izin Pemungutan dan Pemanfaatan Kayu*<sup>5</sup> or IPPKs and later *Izin Usaha Pemanfaatan Hasil Hutan Kayu*<sup>6</sup>, as have district governments throughout Indonesia (Resosudarmo 2003).

Malinau is also interesting as an experiment in local governance of forest areas. *Reformasi* and decentralization in the post-Soeharto era (since 1998) have introduced new political freedoms and opportunities to which Malinau's residents and government are still adjusting. Customary claims to land have increased, although the district and national governments have not offered any formal recognition of these claims (Anau et al. 2002). Coal and logging companies are now required to pay compensation and offer certain fees to communities, which spurred the privatisation of common village land. There has been rampant confusion about the possibilities for registering claims to private land even in designated state forest areas and lack of guidelines and authorities for resolving claims. Contacts with government officials in Malinau have been more frequent. The government has held regular public meetings, although few villagers from outside of the city of Malinau ever attend. Civil protests against companies have increased dramatically, with blockages and seizure of equipment common. As the district has grown in authority and sought to test its muscle, it has sometimes clashed with national policies, especially concerning small-scale logging, which the central government calls illegal. The division of roles between the district and center has not always been clear in many matters, including forest management.

Representation in Malinau thus occurs in the context of an exhilarating, but confusing mix of customary, district and national governance systems. The diversity of ethnic groups, each with their own customary arrangements and historical allies and enmities adds to the mix. Being a forest frontier area, Malinau has entertained reckless money

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5 License to fell and utilize timber.

6 License for enterprise use of wood forest products

politics for many years, and seemingly all the more so since the district government took charge. During the uncertainty and transition of the last five years (2000-2004), many groups tested the limits of what they could gain. These features have coloured the nature of representation, which we describe below.

*Pintar Bicara: Representation as good representatives*

Local people see representation more in terms of the attributes of the individual representative or *wakil*<sup>7</sup> who does the representing, and less in terms of institutions. Representatives were the select people from a village who met with other villages, the government or companies. The village settlement, as an ethnic and administrative unit, was the constituency. People commonly viewed the role of the district people's assembly (*Dewan Perwakilan Rakyat Daerah*) and newly introduced, but not yet operational village assembly (*Badan Perwakilan Desa*) as checks to the power of the district or village leader respectively and not as bodies that represent citizen's interests.

When asked about the aspects of a good village representative, people invariably responded the person should be "*pintar bicara*" or he can talk well. He should also not be a *pemalu* (shy person), should have *kewibawaan* (authority) in the community and should have good reading and writing skills. Some indicated the person should be drawn from the aristocratic class. Bad representatives were those who were immoral or received money from other parties to make decisions counter to the village's interest. One villager jokingly referred to his *kepala desa* or village head as "*Kepala Dosa*" (*dosa* is to sin). Sometimes villagers trusted the person second in command more for the reason they believed he received less payments from outsiders. Good representation was therefore more a matter of competence in communicating and trustworthiness, than about responsiveness and formal accountability to the different interests of the constituency. There were no formal expectations that representatives needed to consult or report back to their group. This happened only irregularly and often informally.

*The role of the elite*

Representation of people's interests in a village and beyond revolved around the village head and his inner circle of powerful, often aristocratic individuals whom villagers called the *tokoh masyarakat* (village elders<sup>8</sup>, leaders). The role and expectations of the village head need to be understood in their historical context. Village heads are presently elected by the village residents. The district leader makes the appointment and pays the head a monthly salary of about USD 83 (Rp. 750,000). Elections and approvals of the village head are often rumored to be rigged. But government-appointed village heads are a relatively phenomenon, established with Law No. 5 in 1979. Although customary leaders were unrecognized by the Soeharto New Order, the practice was for the customary (*adat*) leader to become the village head and for local people to still refer to them as *adat* leaders. They thus carried both customary and government authority. Many of the older village heads today are descendents or relatives of these *adat* leaders. Since reforms and decentralization, the

<sup>7</sup> All foreign words are Indonesian

<sup>8</sup> The *tokoh masyarakat* are not necessarily old, but they are considered the people most capable of making decisions on behalf of the community.

position of village head has lost its appeal for many because of the popular demand for more accountability, the increased financial stakes involved and resulting complexity of politicking. Many of the older generation have retired, and younger, more educated leaders have come into power in their place, often without the authority of *adat* leadership and often unwillingly.

The *tokoh masyarakat* included the village's current customary leader, responsible for domestic affairs of the village, as well as teachers or outsiders with more education or experience with government or companies. The customary leader was usually a relative of a previous customary village head. The *tokoh masyarakat* were invariably present in larger numbers and more active in meetings. It was not necessarily a coherent group that always shared the same views.

The village head made decisions. His job was to "listen to the opinions of lots of people," according to one former leader. Within villages people directly conveyed their interests to the village head or indirectly through someone close to him. They delivered these opinions privately or in general meetings. The village head or his secretary, the second most officially influential person in the village, called and facilitated meetings.

Villagers usually accepted decisions made by the village head and his circle as the decision of the village, even if they did not agree. Only rarely did others with strong grievances or opposing views speak out. Women attended meetings about village affairs in much lower proportions than men, if at all, saying they were "too busy", "don't know how to speak well and would be shy and embarrassed," "do not know anything" about the topic or the meeting was "men's business". In meetings and general decision-making, there were no formal provisions to ensure representation of the larger population. Leaders operated according to a feeling for what they believed "the *masyarakat*" or community wanted and would accept. The common villager rarely protested out of respect for the aristocracy, lack of alternatives, or fear of personal repercussions.

#### *Power struggles among villages*

Among villages, representation took on more importance. The village head was the nominal representative of most villages. Others from the inner circle accompanied him or acted in his absence. Weaker villages sometimes appointed outsiders to positions in the village administration, with the result that an individual from Sulawesi or Flores represented a Kenyah or Punan village respectively, or a Kenyah represented a Punan village. We suspect villagers sometimes preferred outsiders because they did not trust their existing authorities. Identity was less important than capacity and trust.

Weaker villages often felt out-of-place, unwanted or intimidated attending meetings with more powerful villages. A Punan person said it was often useless to attend meetings arranged by their neighbor, a more powerful ethnic group, because the latter made their own decisions anyway.

Aside from the attributes of the representative or village they represented, the cost of travel in remote forest areas was a major factor affecting representation. In Malinau,

travelers required up to three days to go between Long Jalan, the village furthest upstream and Sentaban, the village furthest downstream. Distance made it difficult for representatives to find out about meetings, send people to meetings or consult with the larger community for more information, iterative decision-making or consensus building. It also skewed representation. We observed at least six meetings involving negotiation of a decision where host villages had twenty or more people present and where visiting villages had no more than two or three representatives each, or one boat-full of people. The villages with fewer representatives were almost always at a disadvantage. Agreements resulting from such meetings frequently failed when factions back at home challenged the decisions their leaders in a distant location. Note that not all meetings involved on-the-spot decision-making.

*Seeking a piece of the pie: Representing villages with companies and government*

Village representation in deals with companies and government followed a distinctly different pattern from meetings in or among villages, especially where money was concerned. Participation in negotiations was limited to the village head and sometimes a select few of the village elite. Leaders acted on behalf of a constituency as the person with official decision-making authority, not as a representative of diverse village interests. Village leaders had few incentives under these circumstances to represent others or to divulge information to them. They often viewed increased access to district officials as an opportunity to negotiate projects or money for themselves and their village (Li 1999). Meetings often took place outside the village in the offices of the company or government. Most community members never saw the agreements their leaders signed with companies. In the pre-reform period, officials from companies and local government preferred to deal only with the dominant group in each settlement and ignored the Punan villages. Post-reforms, especially for access to IPPKs, companies were more willing to negotiate directly with Punan and weaker villages because they needed their permission to access the land.

The number of government public hearings, consultations and “socializations” increased noticeably with reforms. However, district officials lacked information, confidence or incentives for involving local people in a meaningful way. Local people were usually not aware of the opportunities available to them or how to make the best use of them. Ingrained habits and attitudes from the New Order shaped how government interacted with communities. Officials felt nervous about public consultations. In a government-community dialog in 2002, government officials were more concerned about being the target of attack than with the opportunity to interact with community members.

Distance and logistics were major factors in organizing village representation in the district. In the public hearings that took place in Malinau, most seats for community groups were empty. Invitations to hearings were usually circulated only the day before the event was to take place. Among a sample of six meetings, the *Laporan Pertanggungjawaban* or District leader’s accountability speech had the highest attendance with about 50 community members. Three other meetings only had attendance of 10 - 30 community members, and two meetings had attendance of one or no community members. Those community members that did attend were with



one exception, all from villages in the immediate vicinity of Malinau City, with none from the upper Malinau watershed, let alone the more distant reaches of the district.

DPRD members did little to solicit input or report back to community members. They viewed their accountability as linked to their success in election only. When challenged about a decision by community members, it was common to hear an assembly member replying “*Siapa yang suruh?*” (roughly, “At whose orders?”) implying that the community should trust the DPRD member since they chose him in the first place. Local people complained that assembly members rarely visited villages and that local people needed to go to Malinau to express their concerns.

### **CIFOR in Malinau**

CIFOR is a member of the Consultative Group for International Agricultural Research and has the general mandate to conduct research for the public good that will improve the sustainability of forests and help alleviate poverty. CIFOR has been conducting research in the Malinau watershed since 1996 to test long-term, integrated approaches to managing large forest landscapes.

One component of the work in Malinau is to understand collaboration among different groups and how they adapt to changing circumstances. In 2000, CIFOR’s Adaptive Collaborative Management (ACM) team responsible for this activity began participatory action research in the 27 villages of the upper Malinau River, with more intensive efforts in the four villages of the Long Loreh location.<sup>9</sup> We decided from the start that we wanted to use action research to achieve meaningful collaboration and outcomes for communities. We shared a commitment to research that benefited disadvantaged local groups and was driven primarily by local, rather than “scientific” or donor priorities. Our capacity to make this happen was compromised by needing to fulfill CIFOR and donor mandates. Our field team included three Dayak people from Malinau, and one Balinese and one Dutch man, (both of whom were married to Dayak women from East Kalimantan!).

During the last five years of our work our specific aims and objectives evolved to fit specific circumstances. The common thread, however, has been an aim to *empower communities to increase their access and control over forest benefits and decisions*.<sup>10</sup> We sought to facilitate communities to increase awareness about their opportunities, confidently express their needs and opinions, manage conflict, negotiate for their demands more effectively, and to use and influence decision-making in their interactions with local government, local companies and other villages or ethnic groups. This work included facilitating:

- Participatory mapping and inter-village agreements
- Community participation in district land use planning

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<sup>9</sup> Long Loreh (Kenyah), Sengayan (Merap), Pelancau (Punan Malinau), Bila Bekayuk (Punan Tubu).

<sup>10</sup> During the course of the work, we collaborated with officials in the Bulungan and Malinau district and subdistrict offices, including Bappeda, Dinas Kehutanan, Dinas Pemerdayaan Masyarakat, Dinas Pertanian, Dinas Ekonomi, Bagian Hukum, INHUTANI II, the Meranti Sakti local timber concession, and the provincial Dinas Kehutanan. We have also collaborated with Mularwarman University, Plasma, SHK-Kaltim, PPSDAK, Padi, LPMA, Phemdal, WWF, P-5-Universitas Mataram, the University of Victoria (Canada), Wageningen University and Yale University in various components of the work.

- Community and district government legal awareness and policy dialog
- Community participation in planning village forest-based economic development and land use

Participatory action research is a vessel into which a lot of ingredients can be poured. During the last five years, we have engaged in dozens of activities that have ranged from more to much less participatory,<sup>11</sup> but we have always tried to stay aware of the implications of who participated and the degree of responsible representation that occurred. We tried to promote principles of representation in activities that we facilitated, albeit with mixed success. We describe these efforts below.

### *Who participated?*

We defined our program boundaries according to the watershed and customary area of the upper Malinau river, which is comprised of 27 villages. Within this area, we chose four clustered villages in Long Loreh for more intensive case studies. In selecting these boundaries and cases studies, we were able to capture diversity across village and ethnic groups within larger groups where there was also the potential for taking collective action. This helped us to meet research and action goals more efficiently, compared to, for example, sampling scattered villages across the district, or working with one group in one location.

Within these boundaries we sought representativeness across villages and ethnic groups in all of our activities. These were obvious political fault lines and near to how villages themselves and the government organized representativeness. In choosing these categories, however we imposed some of our own conceptions. For example, we were more likely to suggest a representative of the Kenyah rather than of the subgroups Kenyah Uma' Long, Lepo Ke', Uma' Lasan, Pua' and Ndang. We defined villages according to how villagers defined them, which included a few Punan settlements not recognized by the government. Activities included an annual inter-village workshop among all 27 villages and numerous other meetings to generate awareness about different issues, or plan and implement activities; training courses; study visits to other sites; multi-stakeholder workshops and monitoring.

While we selected which villages participated in these activities, each village took responsibility for selecting its own representatives. Where only a few participants were possible or special skills were needed, we sometimes made suggestions or approached the candidate directly. But more often, the village head facilitated these decisions. This made participants accountable to their village rather than to CIFOR. It also meant that village elites tended to choose people from their inner circle. For one meeting, the village head selected himself and two of his sons. Delegating representation to family members was not uncommon. On the positive side, many village heads themselves participated. During the course of the five intervillage meetings, about one-third of the participants were village heads.

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<sup>11</sup> Some activities in retrospect could have been less participatory (Wollenberg et al 2003- website do communities need to be good mapmakers)

Although this means of selecting participants worked well for our action agenda and enhanced communication and awareness among villagers (two of our three forms of knowledge), it was not well suited to empirical research where we could minimize biases, draw comparisons or draw observations about the larger population. We therefore found ourselves supplementing our action agenda with conventional data collection among villages or households, using focus group discussions, surveys and key respondent interviews. We tended to focus again on the village head and other elite for the focus groups and key respondent interviews, because these were the people with whom we had the most contact and were the group with whom it was often easiest to communicate. Surveys pushed us to contact a broader range of households more representative of diversity within villages, although the quality of the information was more mixed.

As these stories suggest, in arranging local participation, we found ourselves erring towards representativeness rather than representation among different groups. In hindsight, however, using villages as a unit of representativeness and relying on the village head provided an element of representation that gave our work more legitimacy and acceptability in most people's eyes. Villagers were inevitably pleased or relieved to know the head had sanctioned or participated in an activity. District officials were more interested in working with village heads than with those not holding official positions.

While these mechanisms of representation were culturally appropriate and efficient, they limited involvement mostly to the village elite. The elite were a strategic group with whom to work because of their authority and role of as gatekeepers for decisions in the community and in relations with outside parties. The trade-off was that the broader populations in the watershed were less well informed, and often could not distinguish between the activities of one CIFOR project from another. This has made us think who is best positioned to have certain kinds of knowledge and involvement in decisions. CIFOR's dominant role in coordinating empirical studies has also made us question whether some groups might be more suited to producing certain types of knowledge, and if so, how to make these activities accountable to the local governance system.

#### *How did we promote representation?*

In addition to linking to existing village representatives, we made other explicit efforts to promote representation. These mostly concentrated on asking participants in activities to consult with and report back to their constituency about their involvement in a CIFOR activity. We made reporting back to the community a condition of villagers' participation in field trips. For these small groups, participants seemed to feel more personal commitment and most did indeed report back to their communities. In workshops, we strongly urged all participants to take the workshop's recommendations home and lead discussions in their village. Reporting back in these instances was more irregular. Most participants only reported back to the village head.

We often specified criteria for participants. For our annual inter-village meeting we asked for people who would be able to summarize the results and report back to the community, as well as people who could read, write and would be willing to speak up

on behalf of their village. We asked for three people, including one woman, from each village to encourage some diversity of views and transparency. The criteria were only partly heeded. Participants from each village ranged from none to five and rarely did they meet all the other suggestions.

We tried to stay attuned to the legitimacy of villages' representative. Where we understood the village to be dissatisfied with their official village head, we tried to work with the person or faction the communities viewed as their most legitimate leader. Sometimes we had to invite parallel delegations to accommodate both sides.

We once organized a Punan village to survey their own residents about preferences for different kinds of forest-based enterprises, such as rattan and gaharu<sup>12</sup> collection (Limberg 2004). A committee of villagers whom had been selected in a public meeting guided the entire process enthusiastically. CIFOR field staff accompanied the interviewers. We felt that the survey was necessary to counter the possible biases and influence of the committee, who were composed of village elite. The results of the survey corroborated the recommendations of the committee. After the survey, we felt confident the views of the committee were shared. The community acknowledged that such surveys could be useful for polling opinions in the future.

We also facilitated participants to reflect critically about their own practices of representation in, for example, a village's negotiations with other villages, companies or the government. We analyzed village representation in the boundary negotiations and provided the analysis in the form of newsletters and reports to communities. It was fascinating in role plays to see villagers expressing criteria for good representation, especially the need to consult with the village and develop consensus with different factions. Despite the explicit discussion of such criteria, no villagers seemed to carry these principles home and apply them. Local practices of representation are heavily embedded in the past and not easily changed.

### *Representation of the Disadvantaged*

As part of our aim to empower villagers, especially the most disadvantaged, we worked hard to promote participation and representation of groups that were normally less visible or influential. Among villages we sought to promote Punan and women's interests. We solicited participation from specific villages or set quotas of participants from different ethnic groups or gender in activities. In the intervillage meetings, the percentage of Punan was close to 30 percent (Table 1), which was the approximate proportion of the Punan population in the watershed.<sup>13</sup>

We were less lucky with women in the inter-village meetings, with only 4 to 12 percent of participants being women. The organization of representation primarily by villages meant that marginalized groups within villages were harder to reach. We were more successful reaching women in the case study villages where we could contact them directly. The women of course had no formal constituency, so it was more difficult to link them to official roles in representation. Their informal roles were useful however for the sharing of knowledge.

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<sup>12</sup> Gaharu is a highly valuable resin resulting from a fungal infection of the *Aquilaria* species.

<sup>13</sup> Variation above or below this figure reflected mostly the distance of the meeting location, which rotated every year, from the majority of Punan villages in the far upstream parts of the river.

Table 1 Participation of Punan and women in intervillage meetings (2000 to 2004)

Year	Percent of Punan	Percent of Women	Total number of participants
1999	37	6	82
2000	26	4	54
2002	43	9	80
2003	18	5	51
2004	24	12	41

For both the Punan and women participants, quotas were not enough, however, to ensure influence in mixed meetings. We therefore also tried to facilitate in a way that gave extra support to weaker groups in sessions of mixed composition. We also used techniques such as inviting larger numbers of the weaker group, having the weaker group host the meeting or having a meeting only among members the weaker group. As one of our field staff said, “when we invite women and men to a meeting, the women are quiet. If we invite only women, the meeting is *ramai* (busy and loud).”

At the district level, we identified opportunities for village representation according to government policies and promoted awareness about these options with villagers and government officials. We provided background information about experiences in other places (e.g. oil palm plantations in Pasir, East Kalimantan, the nature of Indonesia’s reforestation fund policies) to support villagers to negotiate their interests. In preparation for meetings of villagers with government officials, we often helped village representatives with their statements and questions.

Given the necessity of working through existing village and government authorities, we faced problems that we believe are classic in promoting the interests of disadvantaged groups. We often met with resistance, jealousy and feelings of being threatened from village elite or government officials when we sought to enhance the influence of a marginalized group. As we ourselves were subject to the influence of these authorities (e.g. for permission for activities, access to information), we needed to sometimes make difficult diplomatic trade-offs between prioritizing our relationship with these more powerful actors or taking actions that enhanced the influence of disadvantaged groups. Oddly enough, some villagers even told us that they wanted us to work with the approval of the district government, despite understanding that it was precisely this relationship that stalled many of the villagers’ initiatives.

We had to try to lesson the risk of being co-opted and reinforcing existing power relationships, while maintaining good relations to protect the continuation of our work. Our approach to this dilemma was to secure the long-term support of controlling authorities, yet create the space to work with different entities within that authority and independently in the short-term. To create this space, over time we learned to work with a lower profile, often facilitating disadvantaged groups in independent activities apart from more powerful groups.

## Discussion

### *The challenges*

What do our observations about representation in Malinau<sup>14</sup> imply for facilitating representation and citizen-driven science? First, local perceptions of representation and the perceptions that we held as western educated researchers differed. Facilitating representation was not just a matter of reinforcing existing norms and laws, but rather making normative choices and bridging in a pluralistic way the different perceptions of what was good representation among villagers, their leaders, district officials and ourselves.

Second, the elite nature of representation in Malinau suggested that the general citizenry and especially the politically marginalized groups such as women and Punan needed extra attention from us as facilitators or others to ensure their interests are represented. Yet facilitators or other “stronger” intermediaries for weak groups are not necessarily representative of their constituency and may distort the constituency’s interests, as has become apparent in the work of many well-intentioned nongovernmental groups working on the behalf of the disempowered. Building upon the tensions highlighted by Yankelovich (1991) above, the entrenched nature of the elite’s ways of knowing, the comfort of keeping things the same and their (and others) view of themselves as superior conspire to separate rather than articulate citizens from their representatives, including well-meaning facilitators.

Third, the transparency of representation was jeopardized by the practice of companies and government of dealing with a small circle of the elite in closed meetings, often outside of the village, encouraged village leaders to act in their own self-interest and collude with the company or government. These practices only exacerbated the tendency for a small number of elite to dominate decision-making, especially with the advent of IPPKs and involvement of more communities in negotiations. Community members were aware of the nature of these negotiations and publicly tolerated them, but in private often expressed their disappointment and suspicions. Such closed negotiations undermined people’s trust in the integrity of their representative, as well as the capacity of the representative to act on their behalf or behave in a fashion consistent with desired values. Although some villagers viewed the integrity of their leaders declining with the arrival of the companies and options for negotiating compensation, leadership in areas without companies and in the pre-decentralization phase often suffered from questionable integrity as well (Wollenberg 2003).

We suggest these challenges are not unique to Malinau and addressing them should be of interest to those seeking to better link governance with the production of knowledge in other places. We turn now to CIFOR’s work in Malinau to assess our own efforts to facilitate citizen science in this context.

### *Did we facilitate citizen science?*

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<sup>14</sup> More details about the practice of representation in Malinau can be found in “Village representation and participatory politics,” chapter in preparation for the book, *Riding the Rapids in Malinau: Local Governance, Forests and Conflict in Indonesian Borneo*, R. Iwan, G. Limberg, M. Moeliono, S. Rhee and E. Wollenberg.

Our activities over the past five years have increased different types of knowledge in Malinau. Although acquired in the context of a meeting that we facilitated ourselves (see comments below about how orchestrating participation can be a means of control), evaluations from 52 participants in the 2003 intervillage workshop indicated that:

- CIFOR expanded our thinking; helped us understand conditions elsewhere; increased our information and experience; improved our human resources; provided feedback about our situation (11 responses)
- Has helped our community advance and develop; has provided input to community through advice and explanations (9 responses)
- Has improved relationships among villages; reduced conflicts; helped with boundaries (8 responses)
- Has helped to bridge communities and government; created space to meet with government (7 responses)
- Has improved awareness about forest conservation (3 responses)
- General positive feedback (6 responses)

Community members were disappointed that the district forest service did not attend the workshop (3 responses), CIFOR's case studies did not include a particular villages (2 responses), CIFOR's work was all "discussion" only (1 response), CIFOR increased conflict (1 response) and CIFOR did not make any decisions for villagers that helped overcome conflicts (1 response).

In an independent evaluation conducted in 2002, one Punan leader from the Loreh case study site said "We now know a lot." "There was a change after CIFOR came. Before, we were too closed. After CIFOR, we became more open about government...CIFOR helps villagers to deliver information, to make requests to government." The evaluation also concluded that CIFOR worked too much with the elite.

We have not promoted as much citizen involvement or self-determination in the production of this knowledge as we originally had intended. This was partly due to our own impatience with a very uncertain and unreliable decision-making environment and the exigencies of meeting CIFOR and donor demands. Despite our goals, we fostered representativeness rather than representation, finding it difficult and sometimes undesirable for us to always follow-through to encourage responsible representation. We recognized over time the advantages of differentiating roles and the need to be selective about when participation was required. We often involved villagers and sometimes government officials in collecting data, only sometimes in the design, and rarely in the analysis and writing of results. For these latter activities there was often a lack of shared interest, capacity or time. People even told us that they preferred CIFOR to take on these tasks rather than themselves. Sometimes the most interesting material to a general audience was too politically sensitive to involve local people.

The most recent intervillage meeting in April 2004 was unique, for community members (including one village head) facilitated the meeting with coaching from CIFOR. The participants evaluated the meeting extremely positively. The facilitators were excellent and the participants took initiative and collaborated in a way we had not seen in other meetings. Ironically, however, some participants said the

communities were not ready to be self-sufficient and run such meetings themselves. They asked for CIFOR to *membina* (guide in development) them and provide *pelatihan* (training); to share experiences, give them materials and provide input so that they could develop a broader outlook (*wawasan*) and awareness. These requests may reflect an interest in CIFOR's resources, an (unreasonable) belief in the superiority of CIFOR's knowledge, or a (reasonable) distrust in the villages coordinating activities with fairness and attention to weaker groups. They may also reflect the desire to be dependent on a patron. Whatever the reason, they suggest that fostering self-determination may include dependency on "expert" groups.

Our concern is that outside groups such as CIFOR at some level facilitate or drive projects with their own research or social development agenda. A power divide normally exists between the outsiders and local people, with the former taking on the identity of the authority and expert, whose knowledge local people see initially as superior. The facilitator-participant relationship is vulnerable to being used as a "cosmetic device that deflects attention from existing power relationships" and that uses local people's participation to seek "the commitment and responsible autonomy of those to be controlled" (Taylor 2001, pp. 136-137). Local people buy into these perceptions as well. In these cases, local people's knowledge does not shape project plans. Instead, project plans shape how local people's knowledge is used (Mosse 2001, p. 32). Organizing participation becomes token and formulaic (Hailey 2001), devoid of real communication or representation of interests.

These risks require researchers or facilitators to build local awareness, self-determination and be accountable to local people through a system of governance. This can be a challenge where local governance is weak, corrupt or undemocratic. In these cases there may be a legitimate role for outsiders to play in promoting better participation and representation. Extreme sensitivity, explicitness about power relations and self-criticism is necessary however to promote "good" governance in appropriate ways as an outsider or non-citizen. We reject that the principles of participation, representation and transparency are everywhere applicable in their western form. Although we find the goals of democratic governance desirable and believe it necessary and healthy to pursue liberating social agendas, we find their simplistic, formulaic and hegemonic promotion problematic. We suggest the need instead to work from an understanding of existing governance systems and always work towards an improved shared awareness among facilitators and representatives about how power and knowledge in and outside that system intersect.

## **Conclusion**

Confusion between representatives' role in acting on behalf of others and standing for others can lead to misleading expectations of representatives and misrepresentation of a group. We argue here that participation according to representativeness of different interest groups is not enough for citizen-driven science. If democratic ideals are sought, participants need to act as representatives with clear constituencies to whom they are accountable and responsive. Clear principles of governance should guide citizen-science to enable fair and transparent production of knowledge in society, as well as better link knowledge to policy making.



Certain factors make it easier to seek representativeness rather than representation. Facilitating good representation requires articulating with local politics at a deeper level than many of us are comfortable with or capable of. Different conceptions of governance are likely among different groups, especially in linking user-based common property systems with state governance and western ideals of democratic good governance. The tensions of elitism, different models of knowledge and inertia operate along the many lines along which power and knowledge are organized: within groups, among them, between citizen groups and government, and between groups and outside parties such as researchers, donors or development agents. Coping with all of these at once is complicated for the human mind. Getting representation is extra work and the need for longer-term engagement, preparation and follow-through can be frustrating to those whose lives run on crowded schedules and deadlines.

A governance approach to citizen science also raises difficult issues. Do certain democratic practices need to be in place to promote citizen science? Which principles of governance should apply? Outside facilitators may bring liberating awareness and new practice, yet need to guard the possibility that they tyrannically (Cooke and Kothari 2001) use their power and status as experts to wittingly or not control outcomes. On the ground, multiple systems of customary, state and international governance overlap and collide. How can citizen science operate in a pluralistic way to bridge these? What if parts of these systems are ineffectual, repressive or corrupt? How should strongly western-influenced conceptions of good governance be used? How much should researchers or facilitators yield to local authorities? Who decides the appropriate balance between self-determination and interdependence on the resources and information of outsiders? There are no right answers to these questions, but there is a need for ongoing debate and awareness about their implications.

Despite these conundrums and the contradictions they bequeath to us, we believe it is necessary and possible to work towards the ideal of good representation, even if it is difficult to fully achieve. What do we suspect is generalizable or useful to informing efforts towards citizen science elsewhere? We suggest the following points may help promote better representation. They require further testing and elaboration.

1. Collect and analyze information about how representation works formally and informally. Find out local people's, including authorities' and disadvantaged groups, views on how well representation works and their own ideas for improving it.
2. Use a scale of work or units of analysis that have existing or potential constituencies and representatives
3. Use representativeness of different interest groups as a basis for representation. Be clear about the categories across which representativeness is required, and identify which ones have existing mechanisms of representation and which do not.
4. Promote improved representation in knowledge-producing activities. Build awareness about different approaches to representation. Engage existing authorities who have formal representation responsibilities. Enhance skills and provide incentives to representatives to consult and report to constituencies, poll opinions and communicate or negotiate more effectively. Identify where existing authorities do not adequately represent their constituency and work with others who do.

5. Share choice of participants with existing representatives or authorities, such that participants are accountable to them rather than the facilitator.
6. Acknowledge and actively work against the biases that promote elite's or experts' over citizen's knowledge. Support disadvantaged groups to have more visibility and voice. Acknowledge and make others aware of the legitimacy of different types of knowledge.
7. Critically question and debate different conceptions of desirable representation. Find balance between supporting and criticizing existing practices to avoid alienating authorities and risk losing your program.

Citizen-based science is only one element of how society can produce knowledge. It offers an exciting approach to linking research, action and policy making to a set of values and practices. Improving the link between citizen science and governance principles does not mean that the tensions we describe above disappear. Rather it means facing the tensions head on, working with them and in the end, being able to honestly answer who speaks for whom.

## References

- Anau, N., Corbett, J., Iwan, R., van Heist, M., Limberg, G., Sudana, M. and Wollenberg, E. 2003. Do communities need to be good mapmakers? <http://www.iapad.org/bibliography.htm>
- Anau, N., Iwan, R., van Heist, M., Limberg, G., Sudana, M. and Wollenberg, E. 2002. Negotiating More than Boundaries: Conflict, Power and Agreement Building in the Demarcation of Village Borders in Malinau. *In: Technical Report Phase I 1997-2001. ITTO Project PD 12/97 Rev.1 (F) Forest, Science and Sustainability: The Bulungan Model Forest. CIFOR, Bogor, Indonesia. Pp. 131-156.*
- Barr, C., Wollenberg, E., Limberg, G., Anau, N., Iwan, R., Sudana, I.M., Moeliono, M., and Djogo, T. 2001. The Impacts of Decentralization on Forests and Forest-Dependent Communities in Malinau District, East Kalimantan. Case Studies on Decentralisation and Forests in Indonesia. Case Study 3. CIFOR, Bogor, Indonesia.
- Berkhout, F., Leach, M. and Scoones, I. (eds.). 2003. Negotiating environmental change: new perspectives from social science. Edward Elgar Publishing, Cheltenham, UK.
- Bickford, Susan. 1999. 'Reconfiguring Pluralism: Identity and Institutions in the Inegalitarian Polity', *American Journal of Political Science* (43)1: 86-108.
- Bogdanor, 1987.
- Bohman, James and Rehg, William 1997. *Deliberative democracy: essays on reason and politics*. The MIT Press, Massachusetts.
- Cleaver, F. 2001. Institutions, agency and the limitations of participatory approaches to development. *In* Cooke, B. and Kothari, U. (eds.) *Participation: The New Tyranny?* Zed Books Ltd., London. Pp. 36-55.
- Colfer, C.P.J., Prabhu, R., Günter, M., McDougall, C., Porro, N.M. and Porro, R. 1999. Who counts most? Assessing human well being in sustainable forest management Criteria & Indicators Toolbox Series No. 8. CIFOR, Bogor, Indonesia.
- Cooke, B. and Kothari, U. (eds.) 2001. *Participation: The New Tyranny?* Zed Books Ltd., London.
- Cox, K.R. 1998. Spaces of dependence, spaces of engagement and the politics of scale, or: looking for local politics. *Political Geography*, 17, 1-23.
- Davis, A. and Wagner, J.R. 2003. Who Knows? On the Importance of Identifying "Experts" When Researching Local Ecological Knowledge. *Human Ecology* 31(3): 463-469.
- Dick, B. 1997. Participative processes [On line] Available at <http://scu.edu.au/schools/gcm/ar/arp/partproc.html>

- Edmunds, D. and Wollenberg, E. 2001. A strategic approach to multistakeholder negotiations. *Development and Change* 32 (2): 231-253.
- Eulau, Heinz and Wahlke, John C. 1978. The politics of representation: continuities in theory and research. Sage Publications, Beverly Hills.
- Fairhead, James and Leach, Melissa 2003. Science, society and power: environmental knowledge and policy in West Africa and the Carribean. University Press, Cambridge, UK.
- Gutmann, Amy and Thompson, Dennis. 1996. Democracy and disagreement. The Belknap Press of Harvard University Press, London.
- Hailey, J. 2001. Beyond the formulaic: process and practice in South Asian NGOs. *In* Cooke, B. and Kothari, U. (eds.) Participation: The New Tyranny? Zed Books Ltd., London. Pp. 88-101.
- Haraway, Donna. 1991. Simians, Cyborgs, and Women: The Reinvention of Nature. New York: Routledge.
- Lawrence, P.R. 1954 May-June. "How to Deal with Resistance to Change" *Harvard Business Review*, 32(3), pp. 49-57.
- Leeuwis, Cees. 2000. Reconceptualizing participation for sustainable rural development: towards a negotiation approach. *Development and Change* 31: 931-959.
- Li, Tania Murray (ed.). 1999. Marginality, power and production: analyzing upland transformations. *In* Li, Tania Murray (ed.) Transforming the Indonesian Uplands: Marginality, Power and Production. Harwood Academic Publishers, Amsterdam.
- Limberg, Godwin. Draft 2004. It's not fair, where is our share? The implications of small-scale logging on communities' access to forests in Indonesia. Paper to be presented in IASCP Panel, Oaxaca, Mexico on 9-13 August 2004.
- McLean 1996.
- Mohan, G. 2001. Beyond participation: strategies for deeper empowerment. *In* Cooke, B. and Kothari, U. (eds.) Participation: The New Tyranny? Zed Books Ltd., London. Pp. 153-167.
- Mosse, D. 2001. 'People's knowledge', participation and patronage: operations and representations in rural development. *In* Cooke, B. and Kothari, U. (eds.) Participation: The New Tyranny? Zed Books Ltd., London. Pp. 16-36.
- Munton, R. 2003. Deliberative democracy and environmental decision making. *In* Berkhout, F., M. Leach, and I., Scoones (eds.) Negotiating environmental change: new perspectives from social science pp 109-136. Edward Elgar, Cheltenham, UK.
- Pateman, Carole 1970. Participation and democratic theory. Cambridge University Press, UK.

Pitkin, Hanna Fenichel. 1967. The concept of representation. University of California Press, Berkeley and LA.

Rao, Nirmala 1998. Representation in local politics: a reconsideration and some new evidence. *Political Studies* 46(1): 19-35.

Peters, Pauline 1996. Who's local here? The politics of participation in development. *Cultural Survival Quarterly* Fall 1996.

Resosudarmo, I.A.P. 2003. Shifting Power to the Periphery: The Impact of Decentralisation on Forests and Forest People *In* Aspinall, E. and Fealy, G (eds.) *Local Power & Politics in Indonesia: Decentralisation & Democratisation*. Pp

Ribot, J.C. 2001. Integral local development: 'accommodating multiple interests' through entrustment and accountable representation. *International Journal of Agriculture, Resources, Governance and Ecology (IJARGE)*, Special Issue on accommodating multiple interests in local forest management, Volume 1, Nos. 3/4, pp. 327-350.

Schumaker, Paul 1991. Critical pluralism, democratic performance, and community power. University Press of Kansas, USA.

Steelman, Toddi A. and Ascher, William 1997. Public involvement methods in natural resource policy making: advantages, disadvantages and trade-offs. *Policy Sciences* 30: 71-90.

Taylor, H. 2001. Insights into participation from critical management and labour process perspectives. *In* Cooke, B. and Kothari, U. (eds.) *Participation: The New Tyranny?* Zed Books Ltd., London. Pp. 122-138.

Tsing, A. L. 1999. Becoming a tribal elder and other green development fantasies. *In* *Transforming the Indonesian Uplands*, 159-202, ed. T.M. Li. Harwood Academic Publishers, Amsterdam.

Wester, Philippus and Merrey, Douglas and Lange, Marna De. 2003. Boundaries of consent: stakeholder representation in River Basin management in Mexico and South Africa. *World Development* 31(5) 797-812.

Wollenberg, E. K. 2003. Boundary keeping and access to gaharu among Kenyah forest users. *Environment and Planning A* (35): 1007-23.

Yankelovich, Daniel. 1991. Coming to public judgment: making democracy work in a complex world. Syracuse University Press, New York.

McCrone, Donald J. and Kulinsky, James H. 1979. The delegate theory of representation. *American Journal of Political Science* 23(2): 278-300.