2008

Co-management of protected areas: lessons from Latin America

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ABSTRACT. The 20th century witnessed a rapid expansion of protected area systems in Latin America, but many areas were created as paper parks (without adequate on-the-ground management) and with little local consultation. In the face of this challenge, several countries became incubators of innovation, seeking ways to simultaneously engage local individuals and institutions to effectively manage protected areas. This paper highlights key lessons learned, best practices and recommendations from Bolivia, a pioneer in public-private partnerships. The paper analyzes the experience of 6.5M ha of protected areas co-managed with indigenous groups, non-governmental organizations, and an academic institution. Co-managed protected areas were significantly better managed than those that were not, particularly for basic protection activities. Protected areas also benefitted from increased public participation, independent of whether they were co-managed or not. Key challenges to co-managed protected areas include unclear rights and responsibilities of the parties, poor communication, distrust, and other institutional weaknesses. Experience indicates that co-management works best when both parties have clearly defined rights and responsibilities, engage as full partners, are committed to protected area objectives, develop adequate institutional capacity, and build mutual trust and local support through effective communication and complimentary mechanisms to foster broad participation.

Co-management of Protected Areas: Lessons from Latin America

EXPANDING PROTECTED AREA SYSTEMS

The final decades of the 20th century witnessed a rapid expansion of protected area systems in tropical Latin America, a major conservation achievement. In many cases, however, new protected areas exist mostly on paper, lacking real on-the-ground management. Often human populations already living in or around these areas were not adequately considered or consulted in their creation or management. Thus, two major challenges facing young protected area systems are related: engaging local individuals and institutions and effectively managing protected areas.

At least in principle, one way to address these challenges is for protected area managers to share some of their responsibilities with local stakeholders. For example, protected areas with human populations within or near their borders could seek ways to involve these local residents in planning and management. Alternatively, protected area authorities might partner with local institutions, thus improving the overall capacity for management. This paper sets out to understand whether these twin strategies have worked in B

olivia. And if so, under what conditions are they likely to be most successful in countries seeking to manage protected areas effectively?

These examples fall under the broad rubric of "co-management." Co-management represents a broad spectrum, falling in between complete government control to completely private management. While co-management can mean different things to different people, we follow the definitions developed by IUCN (the World Conservation Union, 2005) and others (Moore, 2003): protected areas where management authority, responsibility and accountability are shared among two or more stakeholders, which may include government agencies, indigenous and local groups, non-governmental organizations.

BOLIVIA'S PROTECTED AREA SYSTEM

Bolivia's National Protected Areas System is one of the youngest in Latin America. While Bolivia's first national park (Sajama) dates to 1939, and the National Parks, Wildlife, Hunting, and Fishing Law to 1975, the creation of a national system of protected areas did not occur until 1992, with enactment of a very progressive Environment Law. Prior to 1992 approximately 40 protected areas had been established, but without any clear mechanism for their management or financing.

The system currently includes 22 national protected areas that cover approximately 16.7 million hectares, or roughly 16 percent of the national territory, in addition to departmental and municipal areas. Approximately 90 percent of the national areas contain human populations (Blanco, 2005), and thus it was not surprising that the system was born with a commitment to participation. Participation has been a crucial theme and a challenge for the protected area system, as more that 1,500,000 people live within protected areas or their buffer zones (Servicio Nacional de Áreas Protegidas, 2001).

That Bolivia created its protected area system without the benefit of strong national institutions helped catalyze innovations. The country demonstrated far greater capacity to create protected areas than to manage them. Over time, the institutions responsible for protected areas became stronger, and in 1997 the National Protected Area Service (*Servicio Nacional de Áreas Protegidas*, or SERNAP) was created.

BOLIVIA'S EXPERIENCE IN CO-MANAGEMENT OF PROTECTED AREAS

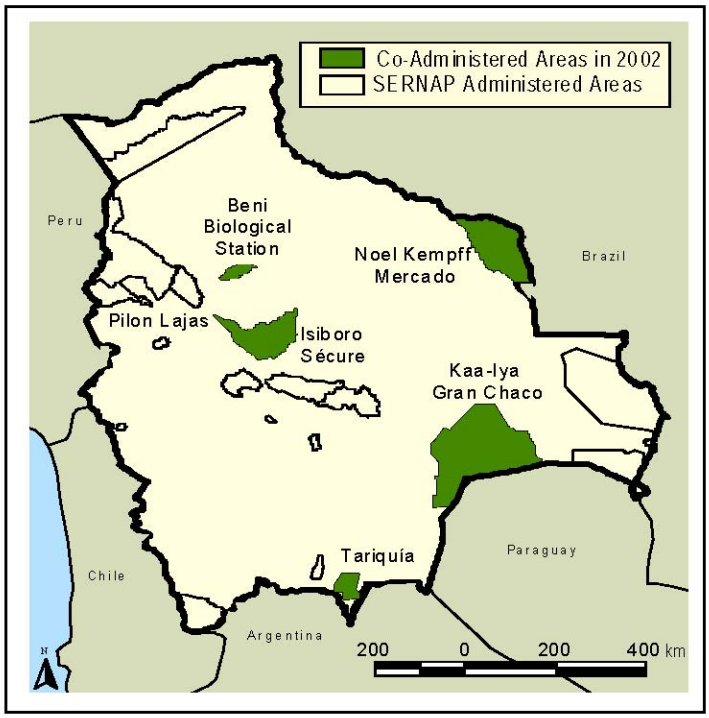
The focus of this paper is formal co-management agreements between the national government and a civil society institution (academic, non-governmental, or indigenous) share the responsibilities of protected area management. In these agreements, the co-administrator assumes certain management responsibilities to achieve the objectives of a given protected area. It is not intended to provide broad participation, but rather delegates certain responsibilities to a local organization with complimentary capacities. The Government of Bolivia's principal motivation in signing co-management agreements has likely been to integrate the additional technical and financial resources into protected area management. Nonetheless, these agreements also have the potential to increase the participation of local groups, particularly when the co-administrator is an indigenous organization. This study focuses on agreements that were active in 2002 – 2003 (Table 1).

Table 1: Bolivia's co-administered protected areas as of January 2003.

Protected Area	Area (ha)	Co-administrator	Type of Institution	Years of Agreement
Noel Kempff Mercado National Park	1,523,446	*Fundación Amigos de la Naturaleza* (FAN)	Local conservation NGO	10 years (4 /1995 – 3/2005)

Tariquía Flora and Fauna Reserve	246,870	*Protección del Medio Ambiente de Tarija* (PROMETA)	Local conservation NGO	5 years (7/1997 – 6/2003) PROMETA did not to renew agreement.
Kaa – Iya del Gran Chaco National Park and Integrated Management Area	3,411,115	*Capitanía del Alto y Bajo Izozog* (CABI)	Indigenous organization	10 years (11/1995 – 10/2005)
Isiboro Sécure Indigenous Territory and National Park	1,236,296	*Sub central del Territorio Indígena Parque Nacional Isidoro Sécure*	Indigenous organization	5 years (7/1997 – 6/2003)
Beni Biological Station Biosphere Reserve	135,000	*Academia Nacional de Ciencias de Bolivia*	Bolivian academic institution	10 years (9/ 1995 – 8/2005)
Total	6,552,727			

Figure 1: Bolivia's protected area system. The five shaded protected areas were co-administered in 2002, whereas the rest were administered directly by the National Protected Area Service (SERNAP).



METHODS

This paper evaluates the experience gained in management of five protected areas co-administered by SERNAP and two indigenous groups, two conservation organizations, and one academic institution as of 2002 (Table 1). Collectively these agreements have governed the management of 6.5 million hectares (Figure 1).

Two complimentary analyses were used. The first is based on a national assessment of management effectiveness of each area by Bolivia's Protected Area Service (Servicio Nacional de Áreas Protegidas, 2004). This periodic assessment was developed by the Protected Area Service (SERNAP) in 1999, refined in 2001, and implemented each year since by park managers in collaboration with SERNAP/La Paz. It builds on the scorecard developed by The Nature Conservancy (2002) in which the functional status of protected area management is measured on a scale of 1 (deficient) to 5 (optimal). The analysis is based on 2002 data, which best coincided with the field work. We used a single factor Analysis of Variance (ANOVA) to test for significant differences in mean management scores between fourteen protected areas that are directly managed by SERNAP and the five that are co-administered. For each group, we compared five broad areas of management: overall effectiveness, basic protection, long-term management, long-term financing, and participation.

To carry out the more qualitative portion of this study, an interdisciplinary team of specialists in protected area management, social sciences, and finance was formed to review documents, carry out field visits to the five areas identified for detailed reviews, and conduct semi-structured interviews with key actors both in the field and capital city.

RESULTS

Strengths of Co-administration

Overall, the five co-administered protected areas achieved significantly higher management scores than the fourteen areas managed directly by the Protected Area Service (Table 3). Management scores for co-administered protected areas were among highest in the country, ranging from a low of 3.4 (on a scale of 5, for Beni Biological Station) to 3.9 (Noel Kempff and Tariquía). Management scores for basic protection opportunities, one of five functional groupings, were also significantly higher for co-administered protected areas. Scores for long-term management, financing, and participation were higher in co-administered areas, although these differences were not significant.

The perceptions of people interviewed were consistent with these findings. Interviewees concluded that management had improved in each of the five co-administered protected areas, and that the threats to these areas had been reduced. A major achievement was increasing the physical presence in areas where the State had previously been absent (Blanco, 2005).

Each actor involved in co-administration had a mix of institutional strengths and weaknesses. In general, the State (in this case, SERNAP) represented the national interest in the protected area, had the legal authority to manage these areas, and brought a system of management. The co-administrators, in general, had greater local presence, acceptance and legitimacy in the eyes of residents. They gained this local legitimacy in one of two ways: either because of legal rights they had to the area, as was the case with indigenous groups, or at a minimum because they were perceived as capable local actors, as was the case with the local NGOs. The strongest local institutions had technical capacity and the ability to raise and manage external funds.

Table 3: Comparison of directly and co-administered protected areas. Analysis is based on 2002 management effectiveness data on a scale from 1 (unacceptable) to 5 (optimal) collected by the Protected Area Service. Overall effectiveness of management and basic protection were significantly higher in co-administered protected areas (*).

Category	Elements measured	Average Score	P value

			Direct Admin (n=14)	Co Admin (n=5)
Overall effectiveness of management	All elements of management described below.	3.10 (Fair)	3.65 (Fair)	0.03 *
Basic protection	Institutional capacity, infrastructure and equipment, training, land tenure, and legal status of the area.	3.14 (Fair)	3.56 (Fair)	0.03 *
Long term management	Threats analysis, protection plan, inventory of diversity, monitoring system.	3.39 (Fair)	4.05 (Good)	0.11
Long-term financing	Execution of the budget, administrative capacity, long term financing	3.70 (Fair)	3.74 (Fair)	0.90
Participation	Local development committee, inter-institutional coordination, relationship with municipalities and prefectures, and programs to support natural resources management and environmental education.	2.61 (Poor)	3.35 (Fair)	0.07

Table 4: Funding for protected area management generated by co-administrators.
Na = information not available.

Co-administrator	Type	Percentage of Protected Area Operational Costs Financed by Co-administrator			
			Average	Maximum	Period
Fundación Amigos de la Naturaleza (FAN)	NGO	na	80 %	1995 – 2002	
Protección del Medio Ambiente de Tarija (PROMETA)	NGO	66%	na	1997 – 2002	
Capitanía del Alto y Bajo Izozog (CABI)	Indigenous	45%	70 %	1998 - 2002	
Academia Nacional de Ciencias de Bolivia	Academic	39%	na	1990 - 2001	
Sub central del Territorio Indígena Parque Nacional Isiboro Sécure	Indigenous	0%	0%	1997 – 2002	

Local acceptance and support - Bolivia is a country with strong regional identities and SERNAP was perceived as an emissary from the distant capital city. Co administration improved relations with local institutions and improved local acceptance of the protected area. The one possible exception was the Academy of Sciences, the co-administrator of the Beni Biological Station. Most local groups perceived this co-administrator as "non local" institution since its headquarters were in La Paz, which may have made management

more challenging.

Protected area financing - The Bolivian protected areas system is heavily dependent on international financing, although access to these funds was variable. Co-administrators provided between 0 and 80 percent of the annual budget of their protected area (Table 4).

This variability was explained by the co-administrators ability to develop alliances with NGOs and donors.

Technical resources and capacity - Co-administrators, particularly strong NGOs able to successfully raise external funds, contributed technical resources and capacities that would have been very difficult to create within SERNAP. These include conservation planning, scientific research, logistical and administrative support, tourism, and international relations.

Greater financial and management continuity – As government funding for parks was variable and often delayed, co-managers complimentary funding provided greater stability. In addition, the time spans required to achieve conservation are far longer than the political cycles in any democratic country. Co-administrators with a long-term vision were able to partner with SERNAP to maintain greater continuity of management.

Limitations of co-administration

We also identified a number of challenges and limitations to co-administration, which are summarized below.

Poor communication, slow decision-making, and the loss of trust - Both relations and communication between the *local* representatives of SERNAP and the co-administrator tended to be good. However the co-administrators perceived that communications with the *central* SERNAP office in La Paz tended to be slow and bureaucratic. Co-administrators felt that the central office provided little feedback regarding the basis for its decisions, some of which were made unilaterally, without involving the co-administrator. These unilateral decisions made the co-administrators feel that they were less than full partners.

In part as a result, a "culture of distrust" (Moore, 2003) affected relations at times, particularly between the central SERNAP office and the co-administrators (Blanco, 2005). In general Bolivia suffers from a strong culture of distrust between civil society and government, and weaknesses in co-administration contributed to this. Some government officials distrusted the influence of non-governmental organizations that managed significant programs and budgets.

Unclear rights and responsibilities in co-administration agreements - A critical weakness was that these first generation agreements tended to be general and vague about the rights and responsibilities of the parties. For example, co-administrators perceived that SERNAP was not always consistent about what kind of decisions it will let the co-administrator make about management issues. All parties agree that future agreements must more clearly articulate rights and responsibilities.

Insufficient government support in applying laws - Many co-administrators felt that the Government did not provide sufficient support for protected areas in critical situations, such as when it is necessary for the State to apply the law (Blanco, 2005). This responsibility has often fallen on the co-administrators, which have had to act on their own to confront judicial processes or on-the-ground attempts by third parties to illegally gain access to the protected areas and their resources. The Izoceños effort to block illegal pipeline construction activities (described above) is one example.

Institutional weaknesses - Partnerships are only as strong as their weakest link, and the Bolivian experience was not without its weak links. Both SERNAP and the co-administrators had important weaknesses. For example, while the overall management of Kaa Iya del Gran Chaco was effective, neither the Protected Area Service nor th

e Izoceño organization had adequate financial management systems when they began workin g together. As a result, weak accounting practic es led to the improper use of some funds. Fortu nately this problem was eventually corrected, b ut for a time it strained a collaborative agreeme nt that for the most part was very successful.

A surprising finding was that although one of th e motivations for developing co-administration agreements was to compensate for the initial w eakness of the Protected Area Service, the agre ements work best when the Protected Area Ser vice (SERNAP) was strong. Co-administrators so ught a stronger, more functional SERNAP, not a weaker one. A weak State presence does not m ake for a good co-administration relationship, at times forcing the co-administrator to assume fu nctions that it does not want or cannot legally a ssume, such as law enforcement.

DISCUSSION

In their global survey of protected area manage rs, Dearden *et al.* (2005) conclude that protecte d area management has become much more pa rticipatory in the last decade. While this trend is very positive, they also point out that improved participatory processes do not guarantee more effective protected area management, as cases such as Fox *et al.* (1996) demonstrate. The chall enge is how to foster participation and good go vernance in a way that improves the effectivene ss of protected area management.

Our analysis concludes that under the right con ditions, co-administration can significantly stren gthen protected area management, reinforcing results of an analysis of 47 protected areas in G uatemala (Ramirez, 2005). Co-administration all owed the Protected Area Service to achieve the physical presence of an authorized protected ar ea manager; gain local acceptance, benefit from the human resource and institutional capacity of civil society institutions, and complement exi sting control and surveillance activities with pro grams in natural resources management, enviro nmental monitoring, and research. Environmen tal education programs were much more develo ped in co-administered areas, both in Bolivia an d Guatemala (Ramirez, 2005). The financial ben efits were highly variable and depended on the abilities of the co-administrator to form alliance s with other organizations. In some cases, co-ad ministrators increased the financial resources a vailable by up to 80 percent per year, develope d long-term financing mechanisms, and compen sated for the lack of government funds at critica l moments. Co-administered areas were also m ore resistant the instability associated with chan ges in governments, as was the case in Guatem ala (Ramirez, 2005).

In addition, co-administrators' technical and fin ancial resources provided support for communit y development activities that extends beyond S ERNAP's mandate for protected area managem ent. These programs in land titling, managemen t of harvested species and other productive acti vities represent a major advantage of co-admini stration; development occurs under the auspice s of protected area management. In remote rur al areas, the support provided by co-administrat ors was often all that communities received. Ho wever, not all co-administrators are able to reali ze these potential benefits, which usually requir e sustained external funding.

Contributors to successful co-administration

Despite its potential, co-administration suffered from the weaknesses that have been important enough to strain relationships and lead several non-governmental organization not to renew co -administration agreements. To chart a road for ward, below we describe the conditions under which co-administration appears to be most suc cessful.

Compatible agendas. To be effective, the agend as of co-managing institutions need not be iden tical, but they must be compatible and supporti ve of the goals of the protected area (Luna, 199 9; Borrini-Feyerabend *et al.*, 2000; Arambiza an d Painter, 2006). In Bolivia these objectives inclu de creating local benefits in ways consistent wit h the long-term conservation of the area.

Both parties collaborate as full partners - There can be a tendency within government to distrus t civil society and participation, which are percei ved to undermine government authority. Civil s

ociety can also be suspicious of the State, which they may perceive as authoritarian and inefficient. To work best, both the State and its partner must build trust and a true partnership. Government agencies need to see co-administrators not as organizations trying to take advantage of the State, but rather as full partners in conservation. This implies that the State should avoid, wherever possible, the taking of unilateral decisions and instead seeking consensus with the co-administrator. Building trust implies fluid communication and transparency in the decision-making processes, use of funds, and oversight of activities. As Arambiza and Painter (2006) point out, true partnerships develop not just on the basis of shared objectives, but rather through the experience of overcoming disagreements in a way that builds mutual trust.

The co-administrator enjoys local support - It is important to realize a potential strength of co-administrators—
that because they involve local actors, they enjoy great local support than a national government institution (Ramirez, 2005). Indigenous organizations effectively representing the interests of their populations have obvious local credibility. Non-governmental organizations can also gain local support, often by building trust and helping address issues that are important to the residents and neighbors of protected areas.

Both parties have the capacity to contribute significantly to co-administration - An interesting conclusion is that while co-administration is often envisioned as a means to compensate for the weaknesses of the governmental agency, it works best when both parties are strong. For this to happen, both parties must have adequate administrative and technical capacity for protected area management. Here the basics can be very important, including effective and transparent financial management systems. It is important to define the minimum capacities required of a co-administrator before entering into any agreement.

Agreements are formalized, clear, medium-term, and tailored to the context - Co-management works best when the rights and responsibilities of the parties are clear (Luna, 1999; Nuñez Saravia, 1999; Borrini-Feyerabend *et al.*, 2000; Moore, 2003, Galvez, 2005). We suggest that agreements should last for at least five years, as the benefits of co-administration require time to develop. Even ten-year agreements require mechanisms to build within the protected area technical and administrative capacity that will continue after the agreement. Co-administration agreements thus should have mechanism for easy renewal when all parties are satisfied, as well as mechanisms to ensure continuity of management when the agreement ends. All Bolivian agreements also contain a safeguard clause that lets the State terminate the agreement if doing so is in the public interest, a useful feature.

Mechanisms are in place for fluid communication, coordination, conflict resolution, and periodic review of agreements.- We recommend formal mechanisms (i.e. ones resistant to change in personnel). Given that it is impossible to anticipate all the needs of a protected area, co-administration is definitely a process that requires adaptive management and regular adjustments. The agreements should also be subject to periodic review and be flexible enough to accommodate necessary changes. This is one of the greatest weaknesses in the agreements signed to date. Attempting to anticipate all possible contingencies is futile and results in unnecessarily rigid agreements. More attention should be focused on the creation and development of mechanisms necessary to accommodate a more flexible framework.

Financial management is effective - Policies should support (not inhibit) efforts to obtain complimentary sources of financing. For example, if raising complimentary funds for protected area management results in an equal cut in national governmental funding, this creates a disincentive for sustainable financing initiatives. Policies should therefore provide incentives for managers to diversify funding sources.

Strategies are in place to ensure conservation after co-management agreements end - While management effectiveness was higher during co-management agreements, it can fall precipitously after an agreement ends if management capacity has not been institutionalized within the protected area.

Managers implement complimentary participation mechanisms - Bolivia's experience demonstrates that co-administration by itself is not sufficient to guarantee adequate local participation (Godoy, 2005). It is thus critical to successfully implement complimentary participation mechanisms, such as the management committees described above. To do so, protected area managers must be very careful to ensure that the local representatives chosen to participate are legitimate representatives of their institution or sector. Improving coordination with municipal government remains a particularly important challenge, as in Bolivia they are charged with promoting local development. For many Bolivians, they are also the most trusted level of government.

To meet local development needs, protected area managers facilitate complimentary services by other relevant institutions - The development needs of rural populations in developing countries are enormous—
ranging from income generation, health services, education, and infrastructure. These development needs are often brought to protected area managers, which are often the only representatives of government in remote rural areas. Unfortunately, neither the protected area agency nor the co-administrator has the capacity to meet all the legitimate development needs of poor and underserved rural populations (Blanco, 2005). Managers thus find themselves in a perilous position, as either ignoring these needs or making unrealistic promises to address them can undermine the trust and support of local residents. The most effective approach may be for managers to listen intently to local people and help connect them to organizations best able to address their needs. Often these are municipal, provincial, or appropriate national government agencies, although development, health, and NGOs can play important roles. The key is to act as a "good neighbor," fostering connections between needs and organizations that can address them, without accepting responsibility for directly addressing all these local needs (Putney, pers. com. 29 January 2007). This allows park managers to help address key development needs while reducing the risk that they make promises that they cannot keep.

A CLOSING THOUGHT: THE IMPORTANCE OF TRUST AND LOCAL SUPPORT

Marc Stern (in press) found that the most consistent predictor of how local people responded to a protected area was how much they trusted its managers. Trust tended to be even more important than local perceptions of the costs and benefits of a protected area. Not surprisingly, the trend was strongest where poverty was less extreme. But even around an impoverished protected area he studied in Ecuador, peoples' connections to park managers and their assessments of their trustworthiness and openness were as important as the costs and benefits of the area. Generating mutual respect and trust is key.

Developing trust is key factor both in Central America, which has more than 150 experiences in co-management (Luna, 1999; Maldonado, 2000; Turner *et al.*, 2004; Galvez, 2005), and in Bolivia (Blanco, 2005). Properly implemented participation mechanisms can build trust. Local people tend to trust what they perceive as legitimate local organizations that understand their realities and are open to their input. Protected area managers can therefore gain the trust of local communities by involving respected local institutions in participatory management, through management committees, co-administration, or other mechanisms that foster participation. These partnerships can also help the national protected area authority to avoid the missteps and miscommunications that can often undermine local trust.

As protected area managers and other local actors gain experience working together, they tend to trust each other more. It allows organizations to overcome the challenges and disagreements that are inevitable in an endeavor as complicated as the management of large protected areas. This engagement has generated more cooperative relationships between the Protected Area Service, non-governmental organizations, local governments, and communities.

We find these results hopeful. Creating local economic benefits from protected areas is important, particularly in poor developing countries. P

articipatory mechanisms can bring additional id eas and resources to bear on these issues. But a lleviating poverty in the most remote and under -served regions of developing countries represe nts a huge challenge. A more tractable first ste p is for protected area managers to improve rel ationships with local institutions. They can gene rate trust through regular face-to-face interacti on, real participation, consistent enforcement, k ept promises, and open and respectful commun ication. This can create the conditions whereby protected area authorities and other stakeholde rs can begin to work together to address the lon ger-term issues, such as expanding local econo mic benefits of protected areas.

AKNOWLEDGEMENTS AND DISCLAIMERS

Support for this study was provided by the U.S. Agency for International Development, The Nat ure Conservancy, and the Bolivian Protected Ar ea Service. In addition, this paper was based in part on a broader study conducted with the assi stance of Mario Baudoin, Hans Kammerbauer, a nd Zulema Lehm.

The author thanks all of these organizations and individuals for their support, as well as to Kristi ne Kuhlman for the protected areas map. The a uthor's views expressed in this publication do n ot necessarily reflect the views of the any of the institutions involved in this study.

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