

Direct Payments for Conservation: Lessons from the Monarch Butterfly Conservation Fund

Mónica Missrie* and Kristen Nelson

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Dr. Kristen Nelson
College of Natural Resources
University of Minnesota

* *Corresponding author- email: miss0023@umn.edu*

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Authors: Mónica Missrie and Kristen Nelson, University of Minnesota

Abstract

Limited success in ameliorating the alarming rate of biodiversity loss worldwide has led donor countries to seek alternative approaches to conservation investments. Innovative strategies such as directly paying individuals or communities to protect areas identified as conservation priorities are being promoted and implemented globally. However, as an emerging tool, knowledge about these mechanisms is limited, prompting the need for applied and theoretical analyses. A deeper understanding of direct payment strategies and their attributes can help decision-makers develop more effective conservation policies and organizations enrich and improve their conservation programs. In this article, the attributes of a ‘real world’ example of a direct payment project in Mexico (The Monarch Butterfly Conservation Fund) are analyzed. This project pays local communities within the Monarch Butterfly Biosphere Reserve to conserve their forest by forgoing the use of logging permits and performing conservation activities. Observations, document reviews and interviews were used to document the operation and implementation of this Fund. Results demonstrate that by providing an economic incentive, the Monarch Butterfly Conservation Fund established a direct link to conservation and gave legitimacy to landowners. However, the Fund faces a high degree of institutional complexity and requires long-term financial commitments and intensive donor-recipient communication. Monitoring compliance and conservation outcomes is costly, technologically complex and requires the incorporation of social dynamics.

Danaidaes \Da"na*ide\ n. from the mythical Danaides who were condemned to fill with water a vessel full of holes; family of tropical butterflies.

Monarch Butterflies (*Danaus plexippus*)

1. Introduction

Although most of the world’s remaining biodiversity is found in tropical, developing countries (Mittermeier et al. 2000), its benefits extend beyond local resource users and national boundaries (Barrett et al. 2001). In their efforts to conserve biodiversity, donors and international conservation organizations act as external stakeholders, initiating financing strategies that provide money and information to influence the decisions and actions of the internal stakeholders who own land and resources (Kiss 2004). However, biodiversity loss worldwide continues at an alarming rate. Like the mythological Danaidaes, external stakeholders seem to be pouring funds into projects that fail to reach their expected outcomes leading them to seek new approaches to conservation investments.

Traditionally, conservation funds in developing countries have been invested in project-based incentives that support communities in activities conducive to biodiversity preservation (Kiss 2004). Examples of these initiatives are integrated conservation and development projects and

community-based natural resource management. In many cases, these approaches have failed to reach their conservation and long-term sustainable development goals (Newmark & Hough 2000; Kellert et al. 2001, Robinson 1993). In industrialized nations, direct or non-project based approaches that pay individuals or communities for the desired conservation outcomes are more common. Examples of these strategies include land purchases, leases, easements, agricultural land diversion programs, tax relief, performance payments, conservation concessions and contracting (Ferraro 2001; Ferraro & Kiss 2002; Hardner & Rice 2002). As external stakeholders consider what type of projects to fund, a debate on the effectiveness of direct and indirect approaches has ensued (Simpson & Sedjo 1996; Ferraro 2001; Conrad & Ferraro 2002; Ferraro & Kiss 2002, Kiss 2004).

As the debate continues, direct strategies are being attempted in many developing nations (Larson 1993; Ferraro & Kiss 2002). The willingness of donor nations and conservation organizations to pay for biodiversity preservation is mounting, prompting the emergence of direct payment strategies worldwide and there is much to learn. Direct payments in international settings are in an experimental stage and literature on this approach to conservation is for the most part, limited to program descriptions and goals, with little empirical evidence of implementation and success.

This article analyzes a direct payment strategy in the Monarch Butterfly Biosphere Reserve (the Reserve) located in Central México. Officially constituted in 2002, the Monarch Butterfly Conservation Fund (the Fund) pays communities to conserve their forest by forgoing the use of logging permits and performing conservation activities. Results suggest that the main difficulties faced during the implementation of the fund were the establishment of the necessary institutional framework and robust monitoring systems. We conclude with general suggestions to inform conservationists considering direct payment strategies.

2. Direct Payments and Economic Theory

Based on the premise of “paying for what you want” and creating incentives by rewarding results instead of imposing specific activities (Ferraro 2002; Kiss 2004), direct approaches use market valuation techniques and assume individuals behave according to what they perceive is their best self-interest. Therefore, when attempting to implement direct payment strategies, external stakeholders need to offer those who own and control habitats alternatives that they perceive as beneficial.

According to economic theory, monetary values are assigned based on the choices people make based on perceptions of their own welfare and their willingness to make particular trade-offs. Market-based valuation techniques work under the assumption that the sector of the market that is willing to pay for environmental values (in the case of direct payments, external stakeholders) should compensate local owners for the opportunity costs they incur by forgoing economic production that deteriorates the resource in question. A low opportunity cost (e.g. the pay-off is worth giving up certain choices) is the best incentive to choose one alternative over another. Therefore, the willingness of different sectors of society to accept the opportunity costs of conservation is crucial to the long-term success of direct payment strategies (Gullison et al. 2001). This willingness can only be achieved through a process of bargaining and negotiation among heterogeneous groups of stakeholders.

3. Examples of Direct Payments

Direct strategies range from purchasing land to paying for environmental services or maintaining natural habitats and biodiversity. For example, in the U.S., the Nature Conservancy has purchased over half a million hectares and set them aside as natural reserves (Murray 1995). In the Catskills region, New York City's government bought land and easements to protect the watershed instead of investing in a water treatment plant (Chichilnsky and Heal 1998). In the Netherlands, farmers are paid to produce particular clutches of bird species (Musters et al. 2001).

Land purchases and easements are also found in the developing world. In Costa Rica, the BOSCOA project pays landowners who agree to establish a conservation easement (Donovan 1992) and the Monteverde Conservation League has bought land and established a private preserve (Rojas and Aylward 2001).

In addition, projects involving payments for environmental services are becoming more common. The Costa Rican Environmental Services Payment program establishes contracts with landowners and pays them to reforest, preserve and sustainably manage their forests (Castro et al. 1998; Calvo & Navarrete 1999). In Belize, Brazil, Costa Rica and Mexico, investors get carbon credits by paying landowners who protect and plant trees or increase the carbon content of soil and vegetation (Castro et al. 1998, Nelson & de Jong 2003). In Southern Africa the "Working for Water" program pays locals to clear invasive alien vegetation as a conservation service (Kiss 2004).

Other innovative strategies where payments are given in exchange for non-use of resources are also underway. In Papua New Guinea a conservation trust fund was established to pay communities who own forested land to abstain from granting logging concessions (Seymour and Dubash 2000). Two communities in the Maya Biosphere Reserve in Guatemala have agreed to lease standing trees to conservationists and protect the ecosystems where they live (Hardner & Rice 2002).

4. Attributes of Direct Payments

Most of the literature on direct payments has focused on describing and comparing them with indirect approaches, but some authors have also addressed the issue of evaluating their effectiveness (Simpson & Sedjo 1996; Conrad & Ferraro 2002; Ferraro 2002; Ferraro & Simpson 2002). Ferraro (2001*a*, 2001*b*), one of the most prolific proponents of the direct approach, has identified a set of attributes to analyze indirect and direct strategies. He purports that direct strategies are simpler to implement than indirect approaches because practitioners can focus exclusively on designing appropriate institutions and payment schemes without attempting to design a complete development and conservation strategy. Ferraro suggests direct payments possess the following characteristics: a)high institutional complexity, b)direct link to conservation, c)precise targeting at a landscape level, c)low infrastructure and technological complexity, d)high monetary costs, e)potentially high short-term impact, f)uncertain long-term impact, g) less salient immigration incentives. These attributes provide a useful framework to analyze conservation strategies and their efficacy. We analyzed a 'real-world' example of a

direct payment strategy using this framework to gain insights on how these strategies work in practice.

5. Area of Study and Background

Located in the states of México and Michoacán, the Monarch Butterfly Biosphere Reserve legally protects the oyamel fir-pine-oak forest ecosystem that serves as winter habitat for hundreds of millions of monarch butterflies (*Danaus plexippus* L.) that migrate south in the fall from eastern Canada and the mid-western United States. The survival of monarchs overwintering in México depends on a well preserved, functional forest ecosystem that provides the macro- and microclimatic conditions that prevent them from freezing, and allows them to conserve their energy until the spring migration back to the U.S.A. and Canada (Calvert and Brower 1986; Alonso-Mejía et al. 1993, 1997). This forest ecosystem has been degraded by excessive and illegal commercial logging, wood harvesting for domestic use, conversion to agriculture, and damage from periodic natural and human-induced fires (Snook 1993).

Most of the forests in the area are owned collectively but there are also a few federal and private properties and some under litigation (Merino & Gerez 1996). Although communities and private landowners own the land, the federal government technically owns the trees themselves and can regulate their use (Jaffe 1997).

The first attempt to legally protect these forests was in 1980 when the overwintering areas were designated as a Wildlife Reserve. In 1986 a presidential decree established a 16,110 ha Biosphere Reserve with a core zone where no logging was allowed and a buffer zone where controlled logging was allowed through permits granted by the government (Diario Oficial 1986). Biological knowledge was limited at the time, rendering the Reserve's design inadequate to protect the butterflies. In addition, the Reserve was established without a consultation process with the local inhabitants (the majority of the land in the area is owned by *ejidos*¹ and indigenous communities) as required by the 1970 and 1986 Forestry Law (Chapela & Barkin 1995; Merino & Gerez 1996). Communities did not participate in the planning process to define the Reserve or the management plan, and thus were unfamiliar with the conservation plan for the area (del Rio et al. 2004; Chapela & Barkin 1995). Forest use was limited without offering effective economic alternatives to landowners (Chapela & Barkin 1995; Hoth 1995; Merino & Gerez 1996). Confused and disconcerted, several communities intensified their logging activities, destroying their forests (Merino & Gerez 1996).

In 1997, during the North American Conference on the Monarch Butterfly, landowners urged the government to reconsider and reduce the size of the Reserve. The World Wildlife Fund (WWF) México Program decided to assist the authorities in the re-definition of the reserve by providing a technical proposal that would delineate new reserve boundaries congruent with the conservation needs of the overwintering colonies. Simultaneously, WWF, in collaboration with the Fondo Mexicano para la Conservación de la Naturaleza (FMCN) designed a direct payment strategy based on a capital fund to finance payments to communities within the core zone in

¹ *Ejidos* are communally owned lands established following Mexico's Revolution in 1917. *Ejidos* afford rights to individuals to farm small plots of land and rights to communities to jointly use wild lands and forested areas (Wilson & Thompson 1993).

exchange for relinquishing their logging permits and performing conservation services. On September 15, 2000, a 5 million dollar grant was secured from the David and Lucile Packard Foundation to support the strategy. Managed by FMCN as an endowment fund, 85 % of the capital was invested in fixed income options (mainly Mexican government bonds), 15% in low-risk bonds and 5% in cash.

On November 10, 2000, a third presidential decree expanded the Reserve to 56,259 ha (Diario Oficial 2000). Unlike the 1986 decree, the Reserve design was negotiated with the communities under a participatory framework designed by the Ministry of the Environment, Natural Resources and Fisheries (SEMARNAP) and the National Ecology Institute (INE). It was also packaged with the direct payment program designed by WWF and FMCN: the Monarch Butterfly Conservation Fund (the Fund) (Missrie 2004).

6. Methods

The expansion of the Reserve and the establishment of the Fund by WWF and FMCN provide a valuable example of a direct payment strategy. The focus of our analysis was on the operation and implementation of the Fund. Field research was conducted in México City and Michoacán from June to August of 2004². The primary techniques were observations, document analysis and semi-structured interviews with key informants from the organizations involved in the establishment and operation of the Fund and representatives from each stakeholder group.

6.1. Observations

During Missrie's three-years collaboration with WWF observations were conducted that enabled the documentation of the chronology and history of the negotiation and implementation of the Fund. In 2004, three field visits were made to interact with community leaders, and both female and male community members to get a sense of the community's perceptions of the Reserve and the Fund. In addition, Missrie observed the fund disbursement decision-making process, during a meeting held by the Technical Committee of the Fund in México City in June 14, 2004. Notes were taken during the field visits and the meeting.

6.2. Document analysis

To learn more about the Fund's establishment and operation the following documents were analyzed: WWF's pamphlets describing the Fund, information sheets from the Reserve's main office, contracts between donors and recipients and WWF's monitoring and payment reports.

6.3. Interviews

To evaluate the Fund's implementation and document the perceptions of the principal actors eleven interviews with individuals from key organizations and stakeholder representatives were conducted during the 3 months of fieldwork. A semi-structured approach was utilized in which the interviewer exerted minimal direct control but asked specific questions to focus the interview and obtain responses to particular topics of interest (Rubin and Rubin 1995). This interrogative style allowed considerable freedom of response and yet directed the interview toward specific

² From 1998 to 2001, Mónica Missrie collaborated with the WWF team that designed the Monarch Butterfly Conservation Fund but left in 2001 to pursue a graduate degree. In 2004 this project was completed after a three-year absence but some of the insights are based on Missrie's participation during the initial stages of the project.

issues. Two interviews were conducted in English, and the remaining nine in Spanish. Seven in-person, interviews were taped, transcribed in Spanish and translated into English by one of the authors. Four interviews were conducted by phone, notes from the conversation were taken, transcribed, and translated.

Interviewees consisted of three WWF officials, two FMCN officials and one representative from each stakeholder group involved in the Fund (donors, non-governmental organizations, government, scientists, and community representatives).

Interview questions were designed to elicit information based on the following themes: perception of the conservation issue and the strategy to address it, background and project development, operation and implementation of the Fund, evaluation of the Fund and lessons learned. Interview responses were coded at a broad scale to find emerging patterns. Independent coding of the data by multiple researchers provided crosschecking and enhanced intercoder reliability. Data were analyzed in a largely inductive fashion, as suggested by Creswell (2003), extracting patterns from the evidence and organizing data to reveal common themes.

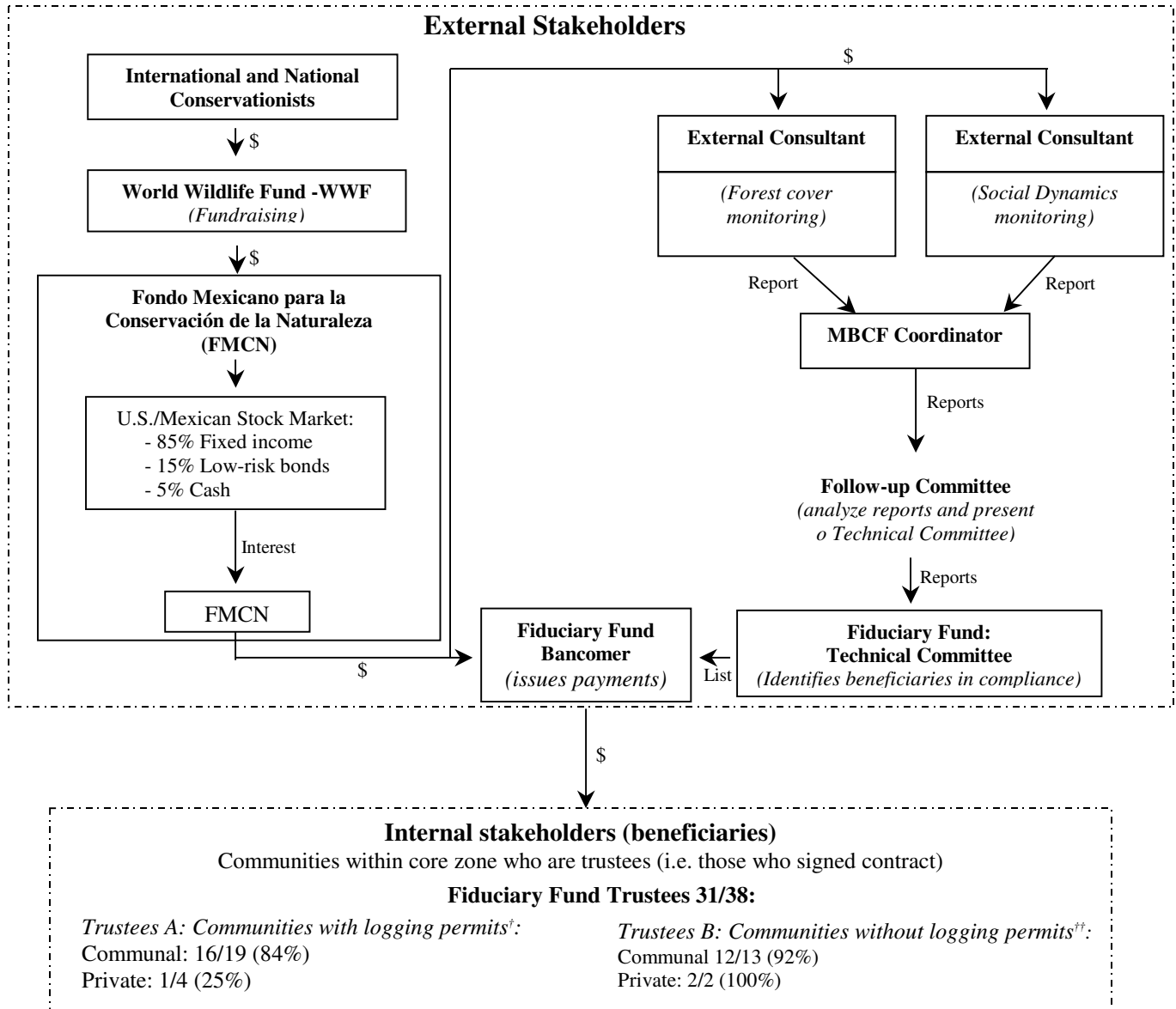
7. Results

Results were analyzed using the attributes described previously as a framework (Ferraro 2001a, 2001b) to determine whether the Fund's implementation corroborated or contradicted Ferraro's appreciation. While many of the attributes coincided with Ferraro's evaluation, some did not. For example, he deemed technological and infrastructure complexity as low and our findings demonstrate that in the Fund's case, complexity was moderate to high. His rating of institutional complexity was high, and we find it adequate but would underscore its importance. Our analysis led to the addition of an attribute for monitoring. Although it is contained in many of the other attributes, monitoring is a key element that deserves a category of its own. Following is a summary of the Fund's history and a closer look at Ferraro's attributes as they apply to the Fund.

7.1. History and Operation of the Fund

The expansion of the Reserve in 2000, led to more limits in resource use, since some of the areas that were buffer zones in the original 1986 Reserve became core zones and thus off-limits to logging. Focused on communities within the newly defined core zone, the original design for the Fund addressed this loss of rights through a two-pronged approach. Communities would receive payments for relinquishing their logging rights and for performing conservation activities. Payments were calculated based on the structure of the logging permits, which were issued for 10-year periods and specified the timber extraction allowed in cubic meters per year. Communities with logging permits would receive US\$18.00/m³ of wood relinquished, and conservation activities would be remunerated at US\$8.00/ha of land they owned. Communities with no logging permits would receive support for conservation efforts at US\$12.00/ha of land they owned. The intent was to stop the payments for logging rights once the 10-year permit period was over and pay all communities US\$12.00/ha for conservation services. (Figure 1).

Figure 1. Principal Actors and Operation of the Monarch Butterfly Conservation Fund (MBCF)



[†] US\$18/m³/yr until permit expires, paid in June; \$8 per ha/yr for conservation services paid in December

^{††} US\$12 per ha/yr for conservation services paid in December

Payment values were calculated by WWF based on a cost analysis of forest resources in the region. Income from logging varies considerably depending on wood-production infrastructure, so payments were determined based on stumpage value. Although not equivalent to the market value, which ranged from \$35.00 to \$60.00, the US\$18.00 was derived through careful consideration of several factors such as the amount available in the capital fund, the number of communities to be paid, and the willingness of communities to accept it. Payments were not considered as a direct economic exchange but rather as an acknowledgement of this willingness to conserve the forest.

A frail consensus was achieved and communities accepted the expansion of the Reserve but had no clear understanding of its implications. The economic incentives offered by the payments, along with a set of support programs offered by the government were instrumental in achieving a final consensus (Madrid 2000).

On October 24, 2000, 17 days before the decree expanding the Reserve was published, legal contracts were signed between the federal government, WWF, FMCN and 29 communities who agreed to participate in the scheme. Under the contract, communities agreed to rescind their logging permits and commit their land to conservation, WWF and FMCN agreed to set up a fiduciary fund (i.e. the Fund) to pay for the permits and conservation activities, and the government agreed to facilitate the administrative tasks necessary to achieve this (Convenio de Concertación 2000). On November 9, 2000 the federal government donated 1 million dollars to the endowment fund and the States of México and Michoacán each donated \$250,000 dollars (on March 12, 2002 and November, 29, 2002 respectively), increasing the capital fund to a total of 6.5 million dollars.

Using the interest from the capital fund, the first payments for conservation services were made by FMCN in December 2000 and payments for logging permits were programmed for June 2001. WWF received a separate grant to monitor forest cover as a measure of compliance with the agreements. Simultaneously, talks began with Mexican banks to set up a fiduciary fund to act as the legal entity in charge of fund oversight and disbursement. Parties to the agreement believed this would allow stakeholder representation, transparency, efficiency, and durability.

However, complications emerged. On January 2001, WWF and FMCN were informed that all the communities in the State of Michoacán had been granted an “advance” in their logging permits and consequently the quota for 2001 had already been logged. Some of the communities that had signed the agreements claimed that the cubic meters stated in the contracts were incorrect. Inaccuracies were discovered in the land tenure polygons used to calculate the permits within the core zone. Additionally, when the contracts were signed the authorities had promised temporary employment and development aid programs that did not materialize. Communities did not understand that payments from the agreements were separate from these government programs. More land tenure issues emerged, properties that were thought to be private turned out to be *ejido* lands and some that were thought to be in the core zone turned out to be in the buffer. To further complicate matters, 2001 was also the year marking a new administration for the Mexican Federal government, thus changing many of the actors.

Faced with this scenario, WWF and FMCN drafted a set of complementary agreements with new payment calculations that discounted the cubic meters that had already been logged and addressed the land tenure inconsistencies. Intensive fieldwork was required to communicate with community leaders and get them to accept and sign this second set of agreements. Of the total 38 landowners within the core zone, 31 signed the second set of agreements on July 2001 and payments for logging permits were made accordingly.

With almost all the communities on board, the creation of the fiduciary fund was still pending. Setting up this fund was the final step in institutionalizing the scheme with transparency, stakeholder representation, and governance. Recruiting a Mexican bank that was willing to establish a fund where communities became trustees and gave up their rights to use their land by legally committing it to conservation proved difficult since land tenure in Mexico is a sensitive issue. Negotiations with several banks followed and the contract was finally drafted during the first months of 2002 with Bancomer. FMCN would continue managing the endowment fund transferring the interest to Bancomer, which would then disburse the funds to the communities.

Based on the previous agreements, the contract converted communities into trustees who committed the land they owned in the core zone to conservation. The contract appointed WWF and the Reserve's leadership to monitor forest cover and conservation activities. Based on the monitoring, the Director of the Reserve would write a proof of compliance report for the Technical Committee. This Technical Committee was composed of representatives from the donor institutions, the scientific community, six individuals with knowledge of monarch conservation, community representatives from each state and the director of a museum that was established to guarantee the fund's perpetuity in accordance with Mexican law. Based on the compliance report, the Committee would identify beneficiaries in compliance and instruct Bancomer to issue the checks to be distributed to communities (Contrato de Fideicomiso 2002). Initially an Oversight Committee composed of the Directors of WWF and FMCN coordinated the project but as this paper was being written it was dissolved and replaced by a project coordinator.

The next step was to get all of the landowners that had signed the previous two agreements to sign this new contract as well as to incorporate those who had not yet accepted. More field personnel were recruited by WWF to explain this final agreement to communities. The Monarch Butterfly Conservation Fund was officially established in May 22, 2002 with 14 out of the 38 landowners in the core zone signing the contract. By November, 2002, after an intense negotiation period, a total of 31 landowners hopped on board. Of these 38 properties within the core zone, 23 have logging permits and 15 do not. Seventeen of the 23 landowners with logging permits, signed the agreements (16/19 communities and 1/4 private landowners). Fourteen of the 15 landowners without logging permits also signed (12/13 communities and 2/2 private landowners). At the time this research was conducted monitoring was limited to forest cover, performed by WWF and the Director of the Reserve and financed with a separate grant. On November, 1, 2004 WWF and FMCN agreed to add social monitoring and to cover all costs with income from the Fund. On November 3, 2004 the Technical Committee decided to create an eleven-member commission to follow up the forest cover and social monitoring.

7.2 Attribute Analysis

7.2.1. Institutional complexity

a) Definition of Roles and Responsibilities Among Stakeholders

Institutional complexity characterizes direct payment approaches, just as it does other conservation initiatives. Institutional challenges include the need for long-term enforcement of rights and responsibilities, conflict resolution mechanisms, and stakeholder coordination (Newmark 2000; Wells et al. 1999). These factors can be especially critical in developing countries where weak institutions at all levels and lack of coordination among actors are common (Barrett et al. 2001).

The Fund was set up using a structure that follows the laws of comparative advantage. Each organization was assigned the task they were more apt to perform. As a conservation organization with technical expertise, WWF would be in charge of fundraising and monitoring; as an expert in trust funds for conservation FMCN would manage the funds; as the field presence and law enforcer the Reserve's leadership would supervise and secure compliance; as the governance entity representing stakeholders, the Technical Committee would be in charge of oversight and transparency; and as recipients, the communities would stop logging and perform conservation services. The division of conservation tasks was set according to relative aptitudes in the hopes of improving the outcomes. In practice, the role of each organization is not as clear-cut and many tasks are shared. Several respondents expressed their frustration with the ambiguity in the definition of partnerships and guidelines. However, currently, steps are being taken to address this issue and as the Fund evolves roles are becoming clearer. The modification of the Fund's structure to include a project coordinator and the recruitment of external consultants to do the monitoring illustrate this evolution.

A clear definition of the organizations and human institutions that will be in charge of implementing direct payment is key to their success (Ferraro 2001*b*). Practitioners need to identify the actors, their roles, rights and responsibilities, and the financial and legal framework. In the case of the Fund, the fact that there was no precedent in Mexico and none of the individuals and organizations involved had previous experience drafting these types of agreements, led to a steep learning curve.

Designing the Fund's structure required support from external experts. Although seemingly straightforward, with each organization designated with a set role, the collaboration of so many stakeholders proved to be complex. The contracts involved entering into intricate legal and bureaucratic arrangements such as obtaining fiscal receipts from communities and negotiating with the federal government to exonerate them from paying the value added tax. WWF officials had to act as fiscal and legal advisors to many of the communities.

The fact that communities are under a common property regime³ creates another set of institutional complexities. To successfully manage their forests, communities under this regime need a set of attributes such as collective-choice arrangements and conflict-resolution mechanisms (Ostrom 1990), which are currently absent in many of the communities involved in

³ "Arrangement in which a group of resource users share rights and duties towards a resource." McKean (2000:30).

the Fund. The concept of investing funds in a project to generate long-term revenues is also lacking in the majority of the communities.

b) Land Tenure and Property Rights Issues

Two crucial institutions to ensure the success of any conservation strategy are property rights and secure land tenure. Individuals and/or communities involved in a conservation project need to be certain that they own and have control over the ecosystem in question (Simpson & Sedjo 1996). In the case of the Fund, uncertain land tenure in the Reserve made the identification of beneficiary communities and payment calculations difficult. As one respondent explained, “not even the authorities understand who owns land in our country.”

c) Enforcement of Rules and Regulations

Perhaps the biggest institutional challenge facing the Fund is the weak rule of law. Enforcement institutions are inefficient and unable to control illegal logging operations that are rampant throughout the Reserve. The project is embedded in an area with a long history of conflict over logging rights (Merino & Gerez 1996), misdirection of funds and a lack of central authority and coordination (Toone 2003). External institutions may be deterring the effectiveness of the Fund, even though all the elements for the project to succeed are in place (i.e. the contracts, the financial instruments, community-NGO communication, monitoring).

More than half of the respondents discussed illegal logging and expressed their frustration with the lack of enforcement by the authorities. A report by WWF states that “logging is the main conservation problem in the Monarch Butterfly Biosphere Reserve” and presents a deforestation analysis and the strategies used by communities to deal with it (WWF 2004). Overwhelmed by the context, WWF and FMCN need to evaluate what role to play under this scenario. As an FMCN official explained, “We cannot be police and benefactors at the same time.”

d) Distribution of Benefits

Equitable distribution of benefits is an important consideration for the majority of external stakeholders that support conservation initiatives (Simpson & Sedjo 1996). The Fund does not follow up on the distribution of the benefits within the communities. On the one hand, this is a sign of respect to local sovereignty and rights but on the other it subtracts from the Fund’s legitimacy. As one respondent stated: “Whether we have a legal obligation or not, if we are going to be raising funds for something, we have a moral, ethical, obligation to know that what we’re doing not only protects the forests because of the incentive but that it will do other good things.”

7.2.2. Monitoring

Monitoring is a key element for the success of any conservation strategy since it allows practitioners to verify that conservation objectives are being met. However, monitoring conservation impacts and compliance may be costly and complex, particularly in direct payment conservation strategies as experienced by the implementers of the Fund. Since the Fund linked payments to logging permits, monitoring forest cover was required to verify compliance. The establishment of the monitoring mechanisms involved a similarly steep learning curve as the one faced when the legal agreements were set up. Initially, a “base-line study” or forest inventory was begun but failed to come to fruition. This method meant to estimate the annual volumes of

wood in each community to detect forest changes but proved too costly and was discarded. As a WWF official described: “we decided to focus on what is gone and not what is left.” The inventory was replaced by remote sensing techniques such as aerial flights, satellite images and field sampling (Honey Rosés et al. 2004).

As the project continued, the Technical Committee attempted to devise the most cost-effective and efficient monitoring mechanism. However, pressured by payment deadlines and financial constraints, monitoring methodologies have not been consistent year to year. An optimal method is yet to be designed and in the meantime Technical Committee members are using the available data to make their decisions on who complied and gets paid. Criteria for these decisions have varied from year to year. In 2003, comparisons of aerial photos from 2001 and 2003 were used to determine deforestation rates and it was determined that communities showing more than 1.5% deforestation would not be entitled to receive payments. This percentage would be lowered to 1% in 2004, .5% in 2005 and 0% by 2006. However, determining these percentages needs to be done with a consistent method that allows yearly comparison and this remains a challenge. Forest monitoring methods have a certain degree of error and do not determine the causes for the forest loss. The majority of the Committee members expressed the need for better data to make their decisions but they realize that like the Fund, monitoring is also under experimentation. The fact that monitoring methodologies are not clearly defined and consistent reflects the lack of clarity in the agreements, which do not state monitoring and compliance criteria in detail. During the Technical Committee meeting, there was unanimous agreement that the forest monitoring methodology needs to be improved.

So far, monitoring has focused on forest cover, but more than half of the individuals interviewed stated that this should not be the only criterion and that social factors should be incorporated. The need to monitor social dynamics was patent during the Technical Committee meeting where members discussed the fact that no one knew who had logged the forest. Several communities have organized surveillance brigades but when faced with bands of armed individuals they are helpless. Maps show the deforestation but not what causes it and communities are not always responsible. Communities who have been subject to other individuals coming into their land to log have presented official complaints to the authorities. These complaints can become a monitoring tool as they give proof of a community’s non-involvement in logging. However, this could prove risky since individuals could file complaints for logging not necessarily performed by outsiders.

In February, 2005 two separate external consultants were hired, one to obtain aerial photographs and another one to compare the forest cover between 2003 & 2005. Another organization is also being recruited to monitor the social dynamics. These changes in the designation of the organizations to monitor reflect the institutional challenges of defining the roles and responsibilities among stakeholders.

7.2.3. Link to conservation

Ferraro argues that in a payment program, the link to conservation is direct (2001a, 2001b) because once a contract is established the connection between payments and expected conservation outcomes creates economic incentives that form that link for both donors and beneficiaries.

Theoretically, a payment may be a direct link to conservation but in practice this link depends on a social understanding of institutions and relationships. As evidenced by all the obstacles faced during the negotiation process of the Fund, this link was not immediately apparent. More than voluntary, participation in the scheme was “forced” by the fact that the Fund was linked to the expansion of the protected area. Communities did not have other options and designing a good communication strategy to explain the Fund proved to be challenging. WWF field officers expressed the difficulty of explaining the Fund in layman’s terms. “We had to learn how to speak in the community’s language”, stated one respondent. Market institutions are often socially and politically bound. Community members understood why a buyer would pay them for ‘whole logs’ or ‘boards’ and how this exchange would be conducted but it was not clear what a conservationist would be buying and what obligations a contract implied.

Concerns and rumors had to be worked through with all the parties before the payment appeared to be a direct link to a clear conservation goal. Some of the issues expressed by the WWF field officers were related to legitimacy and the obligations by both parties. For example, communities feared losing their land if they signed the contract, and perceived the Fund as another government program doomed to fail. Lack of trust of foreign institutions also played a role in their reticence to sign. One respondent stated that many communities only signed because they were getting money. Many communities felt it was not fair to pay those that had already “destroyed” their own forest and others couldn’t understand why the money was not split among them equally instead of being invested in a trust fund.

These ideas and perceptions shaped the community’s understanding and willingness to participate in the Fund. Although they accepted the project, signing the agreements did not translate into an immediate change in perceptions and behavior. As WWF develops a stronger field presence and intensifies their communication campaign, conservation is slowly becoming important to communities and being part of the Reserve is becoming an asset instead of a liability. More than half of the respondents commented on how the Fund increased the value of the forest and conservation for all parties. By acknowledging and legitimizing community rights and rewarding “good behavior” the Fund gave communities a sense of identity and the incentive to conserve. Many respondents felt the Fund helped establish a working, collaborative relationship between the communities and WWF based on respect and acknowledgment of the importance of conserving the forest.

7.2.4. Targeting

Conservation goals and activities may be targeted to a specific species or a particular landscape or ecosystem (Johnson 1995). Conservation concessions in developed countries, for example, precisely target a natural ecosystem and compensate the resources users to protect it (Rice 2002). In developing nations, carbon sequestration projects determine the areas with carbon sinks and pay landowners to protect them (Nelson & de Jong 2003).

However, targeting, does not guarantee expected conservation results. In the case of the Fund, where payments are targeted to the forest within the core zone, legal logging has stopped in the communities that signed the contract but illegal logging continues. Some communities have organized to form surveillance brigades but this has proved to be insufficient. A rigorous

enforcement system needs to be instituted by the authorities to assist communities in their efforts to protect the target (resource, species, landscape or ecosystem).

7.2.5. Technological and infrastructure complexity and monetary costs

Direct payment projects may be low in technological and infrastructure complexity, because, unlike indirect approaches, payments do not involve technology transfer, employment opportunities, or large infrastructure costs, such as water or transportation systems (Ferraro 2001a, 2001b). Indeed, communicating with communities and disbursing payments does not involve complex technologies but monitoring forest cover does. Monitoring is also costly and needs to be financed in the long-term to be able to verify compliance for the duration of the contracts.

Aside from the monitoring costs, long-term funding is also required to sustain payments as well as to adjust them when market conditions change. In the Fund's case, the endowment fund provides the funding to sustain payments in perpetuity but setting it up initially required a large donation. Additionally, the fact that payments are lower than the market price increases the opportunity costs for communities. However, increasing the amounts to match market prices when conservation outcomes are not being achieved would send the wrong message.

7.2.6. Short and long term impact and immigration incentives

Short-term impacts of direct approaches may be high because once the institutions and the payments are in place the link to conservation and local welfare follows immediately (Ferraro 2001b). Long-term benefits can be high if the direct payment mechanism is sustained but political and economic changes may make this difficult (Ibid).

Once the link to conservation was established and the first payments were made, WWF and FMCN were able to establish rapport and good will with communities. The link to conservation was established but more research is needed to determine if the Fund had an effect on community welfare. The amounts being disbursed seem low when we consider the high levels of marginalization in the area but since they are funded by an endowment fund, it is likely that they will be sustained even through political and economic changes. However, political and economic factors are dynamic and cannot be predicted by any conservation project. Immigration is discouraged by the Fund because only the communities with land on the core zone and who sign the agreements benefit.

8. Desired Characteristics of Direct Payment Strategies

Apparently simple because of their direct link to conservation and precise targeting, direct payment strategies face a high degree of institutional complexity and require consistent, efficient ecological and social monitoring and intensive donor-recipient communication. Table 1 lists ten key characteristics that we consider should be present in direct payment projects to increase their probabilities of success.

Table 1. Desired Characteristics of Direct Payment Strategies

Clear conservation goals and objectives.
Clear social goals and objectives.
High investment in design of institutional arrangements and monitoring.
Institutions that enable stakeholder participation, collaboration and conflict resolution.
Separate organizations for fund management and disbursement, and for monitoring conservation outcomes and compliance.
Commitment to a long-term financial, monitoring and social involvement contract.
Strong field presence and communication with communities.
Clear, understandable and fair rules.
Low opportunity costs for beneficiaries to create attractive incentives.
Adequate political timing (political transitions may complicate implementation).

9. Conclusion

Our analysis demonstrates that direct payment strategies may be just as complex to implement as indirect strategies. Both strategies face the same challenges and no matter what approach is taken, conservation needs to be part of a broader development strategy (Kiss 2004). Social goals need to be clearly defined and incorporated into conservation strategies to facilitate the creation of adequate institutional frameworks that foster stakeholder participation and involvement.

In spite of all the complexities faced by the Fund, it is a first step towards building trust among stakeholders. The Fund increased partnerships and helped establish working relationships that were previously non-existent. As one respondent said: “We share the same goals.” The Fund illustrates how organizations can collaborate with governments and communities to support conservation activities. Most importantly, it has contributed to the development of new institutions and provided opportunities for local people to participate in funding decisions that directly affect their communities.

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