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## Treatment of Displaced Indigenous Populations in Two Large Hydro Projects in Panama

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**ABSTRACT:** Consultation practices with affected populations prior to hydro concessions often remained poor in the decade since the World Commission on Dams (WCD) although, in some cases the involvement of local people in the details of resettlement has improved. Numerous international and national actors, such as state agencies, multilateral banks, corporate shareholders, and pro-business media, support the development of dams, but intergovernmental agencies struggle to assure the protection of fundamental civil, human, and indigenous rights at the permitting and construction stages. We analyse two large-scale Panamanian dams with persistent disrespect for indigenous land tenure. Free, prior, and informed consent was sidestepped even though each dam required or will require Ngöbe, Emberá, or Kuna villages to relocate. When populations protested, additional human rights violations occurred, including state-sponsored violence. International bodies are slowly identifying and denouncing this abuse of power. Simultaneously, many nongovernmental organisations (NGOs) seek change in Panama consistent with WCD's good-practice guidelines. A number of NGOs have tied hydro projects to unethical greenhouse gas (GHG) emissions trade. As private and state institutions market formerly collective water and carbon resources for profit, these Panamanian cases have become central to a public debate over equitable and green hydro development. Media communication feeds disputes through frontline coverage of cooperation and confrontation.

**KEYWORDS:** Resettlement, indigenous peoples, Clean Development Mechanism, Panama, AES Corp

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### DAM DEVELOPMENT IN GREEN AND INHABITED TERRAINS

Our paper assesses the ability of international normative frameworks to improve treatment of marginalised social groups during large-scale dam permitting and construction. We critique hydro development in indigenous territories utilising experiences from two Panamanian case studies. Both cases demonstrate hybrid neo-liberalisation as private and state institutions sell formerly collective resources to feed urban electrification and foreign carbon markets. We find private institutions increasingly responsible for providing utilities, social services, and environmental protection surrounding dam concessions. Indigenous peoples confront dam construction as market-based environmental policies create new development trade-offs, and climate-change mitigation shifts resource-management incentives. Eco-efficiency goals linked to purportedly clean energy production appear to supersede concerns over social justice in our case-study examples.

Investigation of resource development calls for a political ecology framework sensitive to dynamic human-environment interactions, cross-scale and multi-sector partnerships, and complex social contestations (Sneddon et al., 2002; Molle, 2007). Our case studies demonstrate competing claims to

watersheds and strong asymmetries of power among interest groups (Wali, 1993; O. Jordán, 2008; IACHR, 2009a, 2009b; Anaya, 2009) – trends evident in water management struggles around the globe (Perreault, 2005; Mollinga et al., 2007; Bakker, 2007; Molle et al., 2008).

Between 40 and 80 million people were relocated by the turn of the century to make room for hydroelectric projects (WCD, 2000), and their numbers continue to rise. Dam construction has shifted from western Europe and North America toward Asia and Latin America. Promotion as a 'clean' alternative to fossil fuel has added to hydropower's allure and fundability. Nevertheless, inhumane resettlement practices continue in spite of new international human rights protections, including the 2007 United Nations Declaration on the Rights of Indigenous Peoples. In addition to ongoing violations of local inhabitants' right to informed consent, we note persistent disregard for indigenous peoples' rights to recognition of their landownership and their land claims. Like the WCD (2000), we argue that indigenous peoples face specific cultural, social, and livelihood risks from dam building.

The WCD advocated for participatory approaches that would assure representation of impacted populations and require demonstrable proof of their acceptance of dam projects starting from the preliminary planning stages. The Commission sought to address the fact that marginal social groups, including indigenous peoples, often involuntarily bear risks associated with dam construction. The Commissioners argued inclusive processes would safeguard human rights and improve the likelihood that basic needs (e.g. food, potable water, shelter) of resettled populations would be met. They concluded that impacted populations need to be involved in the identification, selection, distribution, and delivery of social programmes.<sup>1</sup>

Resettlement creates a number of changes that go beyond simple physical displacement, including social, cultural, and livelihood disruption. Local populations often do not want to leave customary lands. When protest occurs, Central American resistance continues to be violently repressed: state agencies condone or implement mistreatment and intimidation (e.g. Bonta, 2004; Brannan Jaén, 2008; Minority Rights Group International, 2007; Anaya, 2009). Such actions contradict the WCD's recommendations that local indigenous populations give free, prior, and informed consent to the construction of dams. The WCD drew from UN agreements, such as the 1948 Universal Declaration of Human Rights, the main UN human rights covenants, the 1986 Right to Development, and the 1992 Rio Declaration on Environment and Development, to determine that fair and participatory negotiation requires:

1. Effective and legitimate representation of all stakeholders and interests;
2. Integrity of community processes with assurances that they will not be divided or coerced and remain free from external manipulation;
3. Adequate time for stakeholders to assess, consult, and participate; and
4. Identification and elimination of power imbalances.

The highly important social goals put forth by the WCD have proven difficult to implement. In order to achieve broad support and be universally applicable, the Commission's recommendations were fairly general and remained abstract (Fink and Cramer, 2008). However, the underlying problem leading to a lack of implementation is unlikely to be linguistic imprecision. Rather the larger constraint appears to be an unwillingness to comply with the spirit of these recommendations. If WCD recommendations were followed, impacted populations could impede projects with high social or ecological costs during early stages. WCD proposals contrast with historical trends: the fundamental human right of peoples to self-determination has often been ignored so as local decision-makers could *not* block capital accumulation on the part of powerful economic sectors and political interests.

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<sup>1</sup> Where contested dams were already constructed, WCD put forth steps to assess damage claims from local populations and provide reparation. State officials, international finance institutions, and private corporations were expected to provide retroactive compensation. The WCD recommended for settlements to reflect non-monetary and monetary losses and incorporate local priorities.

The international indigenous rights code developed very slowly. The 1989 International Labour Organisation's (ILO) Convention No. 169 on Indigenous and Tribal Peoples in Independent Countries was an important step toward defining international standards but that alone was not adequate.<sup>2</sup> Negotiations on a United Nations charter defining the special rights of indigenous peoples lasted over a decade. The General Assembly passed the UN Declaration of the Rights of Indigenous Peoples (UNDRIP) in 2007.<sup>3</sup> While not legally binding, UNDRIP consolidates existing international rights laws and jurisprudence as applicable to indigenous peoples. UNDRIP clearly stipulates free, prior, informed consent (FPIC). The policy condemns forcibly removing indigenous peoples from their lands, and promotes fair local benefit from the use of mineral, water, or other resources.

In spite of UNDRIP's passage, indigenous rights continue to be violated during resource exploitation and extraction. International policies continue to be designed without sufficient attention to the special needs of indigenous peoples, as we argue, and has occurred with the UN Framework Convention on Climate Change (UNFCCC) and the Clean Development Mechanism (CDM). Even the UN's Millennium Development Goals do not satisfactorily take into account indigenous rights or needs and may lead to negative impacts on well-being rather than positive ones (Doyle, 2009). Nevertheless, while international policies and procedures require ongoing advancement, UNDRIP creates a framework to identify indigenous rights violations and has contributed to precedent-setting rulings in international and national courts (Sirait, 2009). Even though states remain reluctant to legally recognise indigenous land tenure in many cases, there has been recent action on the part of the UN and other international bodies to condemn violations of territorial and human rights. Supranational intergovernmental agencies have also pressured states to renegotiate or cancel natural resource concessions granted to the private sector without indigenous peoples' consent (Mooney, 2006; Anaya, 2009).

## TWO CASES OF DAM CONSTRUCTION WITH CONFLICTING RESETTLEMENT

In Central America there is a historical pattern of violent oppression of indigenous populations to create space for large-scale dams. The Chixoy dam in Guatemala is a notorious case from the 1980s with World Bank and Inter-American Development Bank funding. The dam displaced thousands of indigenous Maya. Protesting villagers were massacred, tortured, and kidnapped.<sup>4</sup> Sadly, violent oppression of populations contesting dams has continued in the region: in Honduras and Mexico, opponents of Babilonia, Patuca, and Parota dams were murdered between 2001 and 2007 (Amnesty International, 2001; Bonta, 2004; Guidi, 2007; Minority Rights Group International, 2007).

Society has learned important lessons from controversial dam projects in India with the Sardar Sarovar dam and other dams in the Narmada project, in Brazil with the Tucuruí dam, in Nepal with the Arun III dam, in Norway with the Alta dam, and in Canada with the James Bay project (Howitt, 2001; Molle et al., 2008). Similarly, our two Panamanian hydroelectric projects are international teaching cases. The decades-old Bayano dam (figure 1) caused ecological degradation and social conflict following resettlement (Wali, 1993; Wickstrom, 2003). Those affected were not adequately compensated and tenure conflict festers. Construction began on the second case study, Chan 1 dam, in 2005.<sup>5</sup> The US\$560 million dollar mega-project has received media attention due to contentious resettlement programmes (Arcia, 2009a, 2009c; Blanco, 2009; Díaz, 2009). Although there is controversy over potentially negative impacts on a biosphere reserve and an internationally important

<sup>2</sup> The ILO Convention No. 169 is legally binding for the 20 states that ratified it.

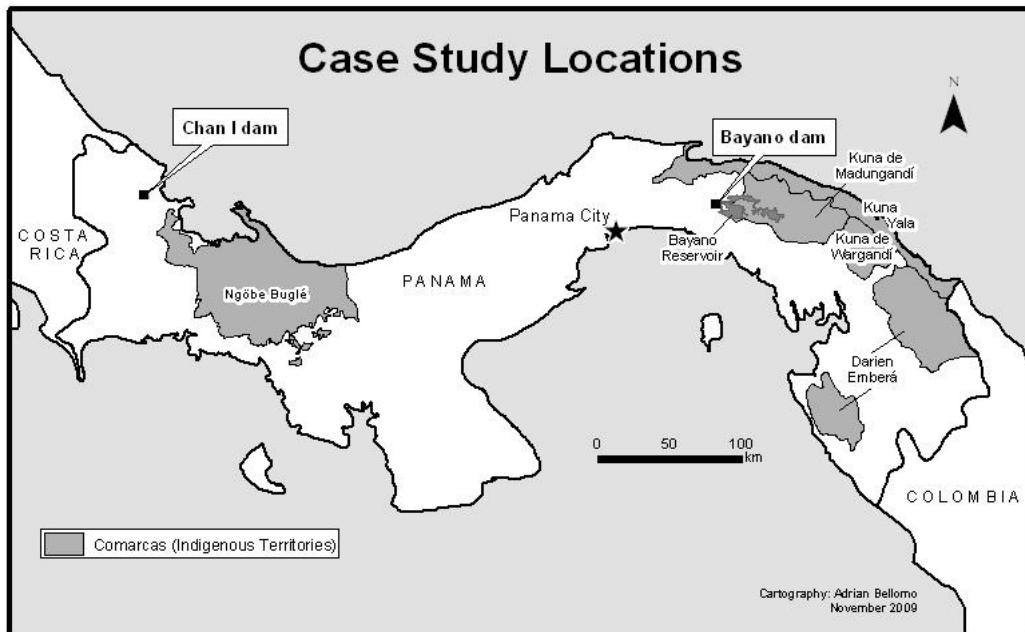
<sup>3</sup> Panama voted for UNDRIP but has not yet ratified ILO Convention No. 169.

<sup>4</sup> Reparations for Chixoy injustices are still under negotiation. After residents returned to protest in 2004, an Organisation of American States (OAS) commission was formed to oversee dialogue between project donors, village representatives, and state officials.

<sup>5</sup> The Changuinola river dam project was originally proposed as El Gavilán. The project was called Chan 75 after AES acquisition and two other proposed dams on the river were named Chan 140 and Chan 220. The dam is now identified as Chan 1 and the other two were merged into Chan 2.

wetland, the hydro project aims to qualify for carbon credits under the CDM. The case exemplifies green neo-liberal intervention as state agencies and private-sector partners protect forest cover to maintain hydroelectric production.

Figure 1. Chan 1 and Bayano dams.



The parent company of the two case study dams, AES Corp,<sup>6</sup> headquartered in Arlington, Virginia, is among the world's largest power developers. The slogan of AES is 'the power of being global'. The corporation generates and distributes electricity in 29 countries. As a Fortune 500 Company, policies and actions of AES influence and reflect larger industrial trends. The firm is well-connected: the Board of Directors includes former senior staff of the US government and the World Bank (Hall, 2004; AES, 2008). By 2008, AES Corp generated 83% of its revenue outside of the US. The firm has 25,000 employees of whom 8300 are located in Latin America. AES is the largest provider of energy in Panama and the Dominican Republic and has a strong presence in Argentina, Chile, and El Salvador. Nearly 80% of AES plants in operation or under construction rely on fossil fuels. The company's reputation for dirty energy production overshadows recent moves to expand its renewable energy portfolio. AES is actively pursuing carbon markets by investing in Mexican and Brazilian agribusinesses with methane capture operations. The firm is also developing hydroelectric production in Latin America with 24 plants acquired or built since the mid-1990s generating 5370 gross megawatts of power. AES owns four dams in Panama and is constructing a fifth.

The dams examined in our Panamanian case studies are part of state-led initiatives to strengthen and grow the national economy and develop remote, forested regions. Although Panama has seemingly advanced indigenous rights laws, indigenous-state conflict over natural resource concessions is common (Wali, 1993; Wickstrom, 2003; O. Jordán, 2008). Both dams are located on indigenous land, and the Bayano dam's reservoir covers a significant portion of the Madungandí Kuna comarca (figure 1). Panamanian comarcas are indigenous homelands with semi-autonomous political organisations (Wickstrom, 2003). State agencies generally expect indigenous populations living in comarcas to

<sup>6</sup> Company stocks are traded on the New York Stock Exchange. Founded in 1981 as Applied Energy Systems, the name was first changed to AES Corporation and later shortened to AES Corp.

accommodate state resource exploitation, while retaining authority over internal cultural and political affairs. Since 1938, Panama has recognised a total of five comarcas that make up more than 20% of the country: Kuna Yala, Darien Emberá, Madungandi Kuna, Ngöbe-Buglé, and Wargandi Kuna (figure 1).

Additional proposed Panamanian comarcas lack demarcation, and legal and spatial definitions of collective lands remain fluid (World Bank, 2000, 2008; O. Jordán, 2008). The state has been unwilling or unable to create specific land boundaries around either case- study dam, even though international finance institutions funded titling programmes in both zones. Not surprisingly, an Inspection Panel (2009) from the World Bank found conflict over hydro development had politicised Panamanian land demarcation.

### **Bayano hydroelectric project: Fomenting discontent**

Between 1972 and 1976 the Bayano hydroelectric plant was built with funds from the World Bank to feed energy to Panama City and the urban core of the country (Wali, 1989a).<sup>7</sup> The reservoir flooded more than 300 km<sup>2</sup> and forced the relocation of 1500 Kuna and 500 Emberá along with 2500 colonists originally from western Panama (Wali, 1993). The number resettled was much higher than original estimates of 450 prior to construction (International Bank for Reconstruction and Development, 1970). Project donors classified the area as an undeveloped and largely unpopulated Indian reservation; the land was untitled and legally categorised as state property, so state agencies planned the dam with little public consultation (Wali, 1993).

Although the dam's reservoir flooded a massive portion of the Madungandi Kuna's territory, opposition was limited at the time: local populations have since argued they were misled about the severity of the impacts (Horton, 2006). Affected groups were assured they would receive adequate financial support and land titles. The state negotiated different compensation packages with the Kuna, Emberá and colonist populations – an action that fed conflict. An inter-agency team of anthropologists, planners, social workers, and engineers designed plans to modernise local farming practices in new settlements (Wali, 1993). State plans initially involved transferring populations to predetermined locations per ethnic group, but indigenous populations did not accept state terms and settled wherever they could. Most stayed in the area close to the dam. Although most colonists were initially cleared from zones adjacent to the dam, a significant number returned. The initial proposed total compensation to landholders was a mere US\$200,000 (International Bank for Reconstruction and Development, 1970), but some never received anything. The Kuna were the most organised group and with persistence many individuals received US\$4500 each (Horton, 2006).

An initial World Bank (1979) audit soon after construction was completed stated that the resettlement was "exemplary", "unusually conscientious", and a model for other relocation projects. However, ecological change due to the construction of the dam had negative repercussions that emerged over time. Wali (1989a, 1993) and Guionneau-Sinclair (1996) document subsequent cultural change. Lands where the Madungandi Kuna and Emberá resettled were less fertile and farmers were forced to switch crops (Wali, 1993). Indigenous populations eventually felt increasingly forced to seek wage labour as subsistence production deteriorated. Trees and vegetation submerged in the reservoir caused eutrophication and harmed local fisheries. Excessive growth of water lettuce created breeding grounds for mosquitoes encouraging disease (Adames et al., 1979; Galindo et al., 1983). Resource degradation fed social conflict as the Pan-American Highway and roads to the dam site opened the area to colonisation (Wali, 1989a, 1993).

In 1976, the inter-agency team created for resettlement was disbanded and a regional development agency, the Bayano Corporation, was created (Wali, 1993). Military officers and ruling party leaders soon took over the Bayano Corporation and expanded logging and facilitated colonist entry. The Bayano region was under military control throughout the 1980s, with military outposts at the Bayano bridge

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<sup>7</sup> The official name is Ascanio Villalaz hydroelectric plant.

and other locations (Wali, 1989b).<sup>8</sup> The corporation's goal to market resources (e.g. rice, corn, cattle, timber) took precedence over social development (Wali, 1993; Horton, 2006). There was migration to the area and expanding commerce profited military and political elite and colonists more than indigenous populations.

The Madungandi Kuna became increasingly organised around demands for land. They negotiated a series of accords with the government, including the Farallón Accord signed with General Torrijos in 1976, to demarcate their territory and compensate for the loss of their land with new landholdings (Wali, 1989a). By the late 1980s, as colonists grabbed more land including parcels in the proposed Kuna territory, indigenous territorial claims consolidated and demands for formal recognition of a comarca strengthened (Wali, 1993; Horton, 2006). By the early 1990s, still lacking state recognition of the comarca, Kuna took matters into their own hands expelling colonists and burning 70 ranches (Rugano, 1992). Madungandi Kuna protests in 1993 involved blocking the highway and kidnapping state officials, leading to the creation of an ad hoc commission to discuss Kuna demands (Horton, 2006). Slow progress encouraged the Kuna to block roads in protest again three years later. In 1996, the Madungandi Kuna finally received a comarca of 180,000 ha: a stipulation was that colonists already inhabiting the area were allowed to stay, but without expanding existing holdings.

The Bayano dam oversight shifted in the late 1990s with the privatisation of the Panamanian Institute of Hydraulic Resources and Electricity (IHRE). State energy projects were sold in parts to transnational corporations such as Hydro-Quebec, Enron, AES Corp, and Union Fenosa. In 1998, IRHE sold 49% of the Bayano dam to AES-Panama. The state kept 50.4% ownership of Bayano and employees bought 0.6%. AES-Panama's construction of the new Estí dam in eastern Panama in 2003 involved the biggest bank loan in national history (Duarte, 2004). Loan funds also contributed to the addition of a third turbine and other upgrades at the Bayano plant. AES-Panama soon requested Clean Development Mechanism (CDM) validation to sell carbon credits from Bayano and Estí. In the CDM applications, AES-Panama argued their social and ecological programmes, including reforestation with commercial tree species and support to local schools, made positive sustainable development contributions. State officials agreed.

Territorial conflict and rapid deforestation surround the Bayano dam even now and the social situation remains tense. Colonists continue illegal land grabs in the comarca, and the Madungandi Kuna express opposition. In 2005, Kuna burned three newcomers' houses and physically attacked a colonist. In 2007, 300 Kuna blocked the Pan-American Highway in protest (Molina, 2007). After spraying the public with tear gas and pellets, police arrested 97 persons, including 10 minors. Several wounded Kuna protesters required medical attention.

Over time the Bayano case received international attention. Bayano failures, along with other examples, encouraged the World Bank to revisit its dam policies in the late 1990s.<sup>9</sup> Bayano was included as one of 150 international cases in the Cross-Check Survey of the World Commission on Dams. WCD representatives gathered in Brazil in 1999, and heard testimony from Kuna lawyers representing the displaced (Huertas and Pacheco, 1999). The impacted Kuna and Emberá first sought indemnification in international courts in 1998 (Aguirre, 2001): the Inter-American Human Rights Commission (IACHR) asked for more evidence. After Panamanian and international legal consultation, the indigenous plaintiffs put forth a new petition. In 2009, the IACHR found reason to believe that land rights may have been violated and decided further review would be necessary (IACHR, 2009b). Even if missteps from the 1970s to date are eventually recognised in a court of law, this highly complex situation will be challenging to resolve to the satisfaction of multiple stakeholders. Assigning responsibility for reparation may be particularly difficult given administrative shifts within project and state offices.

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<sup>8</sup> A military checkpoint still exists at the Bayano bridge (authors' fieldnotes, 18 June 2009).

<sup>9</sup> The Bayano dam was planned before environmental impact assessments were required. Bank officials eventually classified Bayano as an example of a bad dam site: this was due to the large flooded area with high biomass, high hectares per megawatt ratio, long water-retention time, long stretch of river impounded, and high initial fish diversity (Ledec and Quintero, 2003).

Land conflict in indigenous territories remains widespread in many parts of Central America. In Panama, land insecurity is also a problem in the areas surrounding the Chan 1 dam. The state's delay in resolving tenure conflict is even more poignant in the Bocas del Toro province, where Chan 1 is located, since this zone was prioritised for land titling a decade ago and international funds were allocated (World Bank, 2000, 2008).

### **Chan 1 hydroelectric project: Manufacturing consent**

A hydro-complex in the Teribe-Changuinola area of the Bocas del Toro province has been a goal of the Panamanian state since the early 1970s (Wali, 1989a; O. Jordán, 2008), when a US consulting company Chas T. Main wrote the original feasibility study for the project. In 1983, Panama created the Palo Seco Forest Reserve with explicit intent to protect future hydropower in the Changuinola watershed. People living in existing settlements at the time of the creation of the reserve were not adequately consulted (Anaya, 2009).

Since Chan 1 is located within a protected area, the state assumed the local population did not have any land rights (ANAM, 2009), thus the developer did not need to negotiate acquisition (Galindo, 2009). AES-Changuinola, the AES Corp subsidiary developing the dam, estimates that 178 households in four villages must be resettled and that 2500 people live in the area of impact (González, 2009).

The state has multiple justifications for strongly supporting Chan 1: (1) the province suffers from regular electrical blackouts, (2) AES-Changuinola will pay to connect Bocas del Toro to the national energy grid, (3) the dam makes Panama a bigger player in the integrated Central American electrical market, and (4) the dam has been estimated to be able to displace 600,000 tonnes of carbon dioxide when compared to electricity production in thermal plants: credits representing these GHG emission reductions may be sold on global markets, as will be discussed later.

Since 2007 the Ngöbe<sup>10</sup> villages surrounding Chan 1 have rapidly transitioned from small frontier settlements seldom interacting with outside agencies to a development pole experiencing a high degree of external intervention. When local populations learned of the dam they protested, but state forces muted civil disobedience at the construction site (Santiago, 2007, 2008; I.M. Jordán, 2008; O. Jordán, 2008; Santiago and Rodriguez, 2008). Protests continued in urban settings in conjunction with other indigenous populations from eastern Panama fighting dam construction, such as the neighbouring Naso who have been fighting against the construction of the Bonyic dam for five years (Paiement, 2007; O. Jordán, 2008; Díaz, 2009; Trotman, 2009).<sup>11</sup>

AES-Changuinola bought the Bocas del Toro hydro concession with an approved Environmental Impact Assessment (EIA); under Panamanian law only the EIA requires public consultation. The EIA they purchased suggested the majority of the local population supported the project, yet household surveys completed as part of the EIA recorded a vast array of widespread and serious concerns about dam-building (de los Santos et al., 2005).<sup>12</sup> In addition, letters from local populations opposing the project were sent to the state in 2007 during the public consultation period before AES-Changuinola's concession was validated (Anaya, 2009).

AES-Changuinola's General Manager attests the company is conducting participatory resettlements in line with their social responsibility commitments (González, 2009). Social programmes linked to Chan 1 have undergone fundamental revision, requiring costs to grow from US\$18 million to US\$30 million. The original resettlement plan was to relocate multiple villages to one large community within the boundaries of the Ngöbe-Buglé comarca; however, impacted populations refused to leave Bocas del Toro province. Families were then offered payment to purchase land on the outskirts of Changuinola,

<sup>10</sup> Local populations often prefer the spelling Ngäbe rather than the state-recognized Ngöbe.

<sup>11</sup> Many Naso oppose the Bonyic dam in their territory; leaders suggest titling processes are being delayed so that the dam is constructed before a comarca is created (Sánchez, 2009).

<sup>12</sup> Common concerns local populations expressed were loss of land, relocation, flooding of homes, ecological damage, oppression, and maldistribution of benefits.

the provincial seat. The remaining population, the majority, will be moved to new villages inland from current settlements. The state ruled they would be permitted to stay within the Palo Seco Reserve, but they would continue without land titles (República de Panamá, 2007).

AES-Changuinola officials document hosting hundreds of meetings with impacted populations to plan new settlements (González, 2009).<sup>13</sup> Rather than just building new homes, firm representatives suggest they are rebuilding lives. Yet AES-Changuinola's gatherings with local people do not erase the fact that free, prior, and informed consent had not occurred before the hydro concession was granted (Anaya, 2009; Mesa, 2009). Moreover, within meetings there is a power differential (Anaya, 2009) and local populations describe an overall lack of trust (Santiago, 2008). The state has used excessive force in this location and in other indigenous territories that opposed hydro development.<sup>14</sup> The apex of repression in the Chan 1 case occurred in 2008: villagers blocked the company's entrance for two weeks before the state brought in tanks and tear gas. National Police officers brutally attacked protesters: press reports showed blood-covered men, women, and children beaten and arrested (I.M. Jordán, 2008; Santiago, 2008; Santiago and Rodriguez, 2008). National Police receiving a salary from AES-Changuinola have maintained a presence at the construction site since 2008. The dam is scheduled to commence operation in 2011 and steady progress toward completion pressures local populations who have not signed relocation agreements (Anaya, 2009). Company representatives used intimidation to obtain some signatures, or thumb prints from those who were illiterate (O. Jordán, 2008).

AES-Changuinola tightly controls site access by outsiders<sup>15</sup> and employs spatial containment practices with local populations. The firm placed fences around Charco de Pava village, located close to dam construction, with the justification of keeping occupants away from potential harm, including loud noises that could damage hearing over time (de los Santos et al., 2005), and of keeping livestock out of the construction site (Lezcano, 2009a). Transport by river is disrupted and villagers are expected to abandon dugout canoes. To use a road the company built, residents need to cross the construction area in AES-Changuinola's vehicles and pass a police checkpoint. These requirements likely encourage feelings of dependence and resignation, even though more than 20% of households have not signed agreements allowing the dam to utilise lands they still occupy. According to a Panamanian environmental organisation working with local villages, the hydro project spurred internal division and cultural disruption (ACD, 2009a). Resettlement interrupted patterns of communal land use and officials encouraged populations to negotiate individual compensation packages (O. Jordán, 2008). Families who left the reserve received title to individual land plots. Multi-generational households were often split into nuclear family units during resettlement (AES-Changuinola, 2008).

The historical lack of tenure security in the Changuinola watershed makes populations vulnerable. The Chan 1 zone received international financial support for demarcation (World Bank, 2000, 2008). After several years of delay, a World Bank-funded state land administration programme PRONAT (*Programa Nacional de Administración de Tierras*) finally began working in the area in 2007. Ngöbe and Naso populations soon requested a World Bank investigation of PRONAT's actions: the subsequent Inspection Panel (2009) documented inadequate indigenous participation in demarcation decision-making.

Chan 1 shifted resource power away from local populations toward a state- and private- sector conservation partnership. AES-Changuinola's resource management contract with the National

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<sup>13</sup> In mid-2009 AES-Changuinola circulated a list noting 173 informative meetings, 1440 support sessions with families and small groups, dozens of training workshops, and other multiple events.

<sup>14</sup> Barro Blanco hydroelectric project lies in Ngöbe territory along the Tabasara river. An earlier version of this project sparked violent clashes between local people and the National Police. Men, women, and children were beaten and incarcerated. After the Supreme Court suspended approval in 2000, the dam was modified and renamed.

<sup>15</sup> Security officials refuse entry of visitors who have not gone through safety training and wear the proper safety equipment (e.g. hard hats, eye protection, boots, etc.). There was controversy in 2008 over AES-Changuinola refusing entry of a group of reporters and activists to the dam area. The firm stated it was for safety reasons, while opponents suggested it was to limit public knowledge.



Environmental Authority (ANAM) for 6000 ha of the Palo Seco reserve created private responsibility for protection of public lands. State and company officials have developed paternalistic plans to teach Ngöbe inhabitants to live sustainably in the reserve through a park ranger training programme and the creation of community tree nurseries. AES-Changuinola's agroforestry initiatives aim to redirect local economies toward activities they deem conducive with the production of hydroelectric energy.

In mid-2009, as Chan 1 approached the mid-point of completion; the OAS' Inter-American Human Rights Commission (IACHR) recommended the state to halt the construction project and the company consult local populations in good faith (Arcia, 2009a). The IACHR stepped in after James Anaya, the UN Special Rapporteur on the Situation of Human Rights and Fundamental Freedoms of Indigenous Peoples, criticised the Panamanian state for pressure tactics and reproached AES for inadequate knowledge of international indigenous rights norms (Anaya, 2009). The Panamanian Chamber of Commerce lobbied the state to ignore the IACHR's intervention, arguing outsiders provoked opposition to the project (Notimex, 2009). Panamanian officials soon announced their unwillingness to halt Chan 1 and asked IACHR officials to reconsider their recommendation (Arcia, 2009b). In August 2009, IACHR admitted a case charging Panama with violating 12 articles of the American Convention. Panama subsequently promised to oversee firm community conversations. This new round of discussions occurred in Panama City, forcing a small number of indigenous leaders to represent community demands and furthering existing conflict over representation. Months later, at an initial hearing before the IACHR (2009a), state and community representatives both expressed the desire for a friendly settlement rather than moving toward a contentious and potentially drawn out court case. Local representatives testified that resettlement was now an urgent necessity due to the advanced stage of the dam's construction: villages closest to the dam classified their living situation as unbearable.

Central American officials are frequently authoritarian during environmental decision-making and resource-concession permitting (Wali, 1993; Wickstrom, 2003; Bonta, 2004; Sundberg, 2006; O. Jordán, 2008). Citizen-state conflicts often require international oversight to assure fair resolution. Conflicts continue in spite of the fact that international legal and normative frameworks are constantly being developed to promote better practices: there are many more operational guidelines today during Chan 1 dam construction when compared to the Bayano dam days (figure 1). In 2007, the International Hydropower Association (IHA) (2007) circulated protocols to encourage sustainable practices, but IHA rules watered down WCD recommendations (Scheumann, 2008; Bosshard, this volume). The use of ISO and OSHA business standards is growing in developing countries, yet these frameworks do not cover most practices discussed here.

Ecological studies demonstrate high biodiversity in the Chan 1 area.<sup>16</sup> There is concern the dam will impede diadromous fish and shrimp from completing lifecycle migrations. The dam may negatively impact La Amistad Biosphere Reserve, a World Heritage Site, and San-San Pond Sak, a wetland recognised under the Ramsar Convention (McLarney and Mafla, 2007; Thorson et al., 2007). Negative ecological impacts may compound additional dam construction as developers take advantage of investments in worker housing, transmission lines, roads, bridges, and port facilities. AES-Changuinola's Chan 2 dam is scheduled for completion in 2015 (Blanco, 2009).

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<sup>16</sup> AES financed studies carried out by Montgomery Watson Harza (MWH) and the Smithsonian Tropical Research Institute. Scientists recorded four species of epiphytes, two amphibians and one snake species previously unknown to science and identified 86 endangered and 15 vulnerable species in the Chan 1 area (AES-Changuinola/MWH, 2008).

Table 1. Key international normative frameworks for Chan 1.

Frameworks where AES is responsible for compliance
International Organisation for Standardisation (ISO) 14001
Occupational Health and Safety Standards (OSHA) 18001
International Hydropower Association Sustainability Assessment Protocol
AES Codes of Conduct
Frameworks where Panama is responsible for compliance
UN Declaration on the Rights of Indigenous Peoples
American Convention of the Organisation of American States
American Convention on Human Rights
UNESCO World Heritage Convention
Ramsar Convention
Convention on Biological Diversity
Kyoto Protocol

### *Chan 1 media wars*

While the WCD recognised the important role of civil society in influencing public opinion on dams, it underemphasised the role played by the media. Dam developers utilise media outlets to influence hydro development policy, arguing that dams improve lives, provide clean energy, reduce GHG emissions, and build brighter national and global futures. However, we also document formidable use of media to oppose Panamanian dams from diverse cross-scale human rights and environmental networks. Civil society organisations contesting Central American dams create what Keck and Sikkink (1998) identified as a boomerang effect: international networks redirect and amplify the demands of local and national dam opposition. Immediate and broad media diffusion of intergovernmental and nongovernmental recommendations to improve the treatment of local populations add to pressure for reform. Multimedia and social networking platforms allow global civil society to follow each step of dam contestation with minimal effort (e.g. the click of a computer mouse). Although there are elements of a digital divide in terms of access to technology, a broad public debate, in this case extended through the use of multimedia, fits with the WCD's pluralist approach (Brinkerhoff, 2002). Our case studies demonstrate a plethora of NGOs tying Panamanian hydro development to existing international social and ecological debates. However, our analysis also demonstrates ongoing global deliberation about the objectives of energy and carbon-trading projects and the requirements for good practices.

Media wars have surrounded Chan 1's construction since 2007. Advocates spend a great deal of energy on multimedia public-relations campaigns, and opponents have communicated their concerns with equal vigour. While Central American hydro projects are famous for giveaways like logo-ridden backpacks, notebooks, hats, story books, and calendars, AES-Changuinola goes much further to create a total media blitz with radio, TV, and magazine ads, posters, brochures, and sponsored research reports. More than a dozen videos have been posted to AES-Changuinola's You-Tube internet site, each one highlighting dam benefits and local participation in resettlement programmes.

AES public relation employees dispute criticism waged toward the company quickly and persuasively in print media and across the World Wide Web.<sup>17</sup> Online news-comment sections allow company representatives to immediately respond to charges. Company officials adeptly spin media messages to transform potential negatives into positives (see also Beder, 1997). While building the Estí dam, AES-Panama uncovered a series of archaeological sites, including burial grounds as old as 1500 years (AES, 2009). AES-Panama quickly financed a small museum and sponsored the display of hundreds of artefacts before flooding the sites. Dam construction meant loss of knowledge about the Ngöbes' pre-

<sup>17</sup> See the business and human rights website [www.business-humanrights.org/Home](http://www.business-humanrights.org/Home)

Columbian ancestors before sites were even studied.<sup>18</sup> Ironically, AES (2009) projected its role in this situation as a cultural benefactor opening "a window on the past". A similar type of media spin was applied in the case of Chan 1. AES-Changuinola (2008) tried to diffuse concern about potential negative ecological impacts, including biodiversity loss, by drawing attention to their financial contribution to research identifying unknown species in the area.

There are many examples of media bias in support of AES Corp, such as a *Forbes* international news story written from the perspective of a company executive (Vardi, 2008). Panamanian media bias toward AES is clear when a *Panama Post* reporter calls Chan 1 "the most important hydroelectric project in the country over the next fourteen years" (Blanco, 2009), although there are dozens of dams under construction and many more at the proposal stage. An article in *La Prensa*, one of the most widely read papers in Panama, contends if Chan 1 were already functioning the nation's electricity would cost 27% less (González Jiménez, 2008). Another *La Prensa* opinion piece passionately defending the need for more domestic hydro development fails to mention the author was an AES employee with an advanced degree in public relations (Lezcano, 2009b).

There are powerful media campaigns opposing Chan 1 dam as well. For example, *La Prensa* published an opinion piece written by a US correspondent who tied Panamanian dams to repression (Brannan Jaén, 2008). The US-based NGO International Rivers has strongly criticised Chan 1's ecological and social impacts.<sup>19</sup> Panamanian NGOs like the Alliance for Conservation and Development (ACD; Alianza para la Conservación y el Desarrollo) are prominently cited in the domestic and international press for opposition to indigenous rights violations in hydro projects (O. Jordán, 2008; Jordán and Galvin, 2008.). ACD charged the state of Panama with multiple violations before the Latin American Water Tribunal (2008) and is involved in international legal cases in the UN and the OAS. Cultural Survival's Director leads a legal team preparing for hearings in international human rights tribunals.

### *Cross-scale opposition networks*

Numerous organisations have pressured for Chan 1's cancellation. In 2007, the Centre for Biological Diversity sent AES shareholders a letter with 50 endorsements from national and international organisations condemning the construction of the dam. The letter was circulated digitally with the names of key corporate shareholders.<sup>20</sup> The Centre also tried to pressure Danish construction subcontractors to stop building the dam. A coalition of national and international groups pressured to have La Amistad placed on a list of threatened World Heritage Sites due to Chan 1 and other hydro development in the area (McLarney and Mafla, 2007; Thorson et al., 2007). Another multi-scale coalition encouraged Panama's newly inaugurated president to cancel Chan 1's concession in mid-2009 (ACD, 2009b). The diversity and breadth of websites condemning Chan 1 are impressive: updates about the project are regularly covered in e-mail alerts, news services, Facebook, and blogs originating from Panama and internationally.

The Panamanian anti-dam movement fits within growing cross-scale opposition to dams in Latin America, as exemplified by the Latin American Network Against Dams (REDLAR). Many member organisations are grassroots groups made up of populations directly impacted by dam projects. REDLAR was founded in Brazil in 1999 as groups gathered to provide testimony for the WCD. REDLAR has come to represent more than a million members in 250 organisations across 18 countries. A Mexican movement of dam-affected people called MAPDER emerged in 2004 and has begun to play an

<sup>18</sup> As an example of intervention in contemporary culture, AES Corp paid African religion experts to invent public ceremonies in Uganda to move ancestral spirits before dam construction, even though transferring spirits did not fit with customary local practices (Lacey, 2001).

<sup>19</sup> See [www.internationalrivers.org/en/global-warming/the-cdm-kyotos-carbon-offsetting-scheme/comments-changuinola-1-chan-75-large-hydro-pr](http://www.internationalrivers.org/en/global-warming/the-cdm-kyotos-carbon-offsetting-scheme/comments-changuinola-1-chan-75-large-hydro-pr)

<sup>20</sup> Corporate shareholders included Fidelity Investments, Vanguard Group, Legg Mason Funds Management, Janus Capital Management, Barclays Global Investors UK Holdings, State Street Corporation, AXA, Sound Shore Management, Capital Guardian Trust Company, and Putnam Investment Management.

organising role across Central America. MAPDER's 5th Mesoamerican Forum against Dams and in Defence of Rivers and Communities, held in Chiriqui, Panama in April 2009, denounced the dozens of new dams planned or under construction in Panama. The forum brought together indigenous peoples, other marginalised groups, and international supporters.

In September 2009, the National Panamanian Indigenous, Peasant and Popular Mobilisation (Movilización Nacional Indígena, Campesina y Popular de Panamá) began a long protest march.<sup>21</sup> Participants walked for 19 days and covered 380 km to deliver a list of demands to national officials. Their goals were broad, but halting Chan 1 was one explicit objective along with the broader mission to end mining and hydroelectric concessions altogether.<sup>22</sup> Regular 'tweets' updating the marchers' progress were instantly projected around the globe along with digital photo galleries.<sup>23</sup> Examples such as this demonstrate the increased facility with which interested international groups can follow national and local events as they unfold due to advances in telecommunications and broader access to mobile devices.

The story of the Xalala dam in Guatemala suggests community opposition can make a pronounced difference. Indigenous peoples' organisations organised a popular referendum in 2007 on the proposed Xalala dam which demonstrated that 91% of the local population opposed the project: government officials found no bidders when they attempted to sell the project. The recent postponement of the Mexican dam La Parota and a number of other proposed dams suggests that multi-scale opposition to socially repressive projects can encourage respect for human rights.

The work of intergovernmental agencies and cross-scale opposition movements complement one another to pressure for the implementation of better consultation practices prior to dam construction. If implemented, these reforms would likely result in indigenous and rural inhabitants putting the brakes on some controversial hydroelectric projects. Procedures for free, prior, and informed local consent would take power away from state officials and corporate leaders and place greater control in the hands of the people who will directly experience negative consequences from hydro development. Subsequently, if dam projects did move forward, it is increasingly likely there would be more equitable distribution of benefits. Given the number of developing countries with hydro potential that appear willing to marginalise indigenous and rural populations, countries with higher human rights standards may find they cannot assure a sufficiently profitable return on investments to attract massive transnational firms like AES Corp.

## CLIMATE JUSTICE AND PANAMA'S HYDRO PORTFOLIO

Cherrington (2008) states "... some of the biggest current threats to indigenous lands are efforts to alleviate global warming". According to the Indigenous Environmental Network and the Society for Threatened Peoples (2008) indigenous peoples worldwide have "suffered from nuclear energy and nuclear testing, fossil-fuel extraction, big dams and plantations. Now comes more destruction in the name of saving the climate".

Industrial societies have created an ecological debt with the rest of the world (Rice, 2009). The United Nations Framework Convention on Climate Change (UNFCCC) hypothetically creates a process for the parties responsible for anthropogenic climate change to support sustainable development in lesser-developed regions while simultaneously financing mitigation. Emissions trade between the north and the south established under the Kyoto Protocol was expected to support employment, infrastructural development, social assistance, and improvements in environmental quality. However, without international norms for socially responsible mitigation of climate change, inequities exist

<sup>21</sup> This was the third long march for the Ngöbe since the mid-1980s; their 1996 protests resulted in the creation of the Ngöbe-Buglé Comarca.

<sup>22</sup> Other demands included Panama's ratification of ILO Convention No. 169 and land titling.

<sup>23</sup> These can be found at [www.caminatapanama.org/](http://www.caminatapanama.org/)

throughout current carbon export markets (Brown and Corbera, 2003; Thomas and Twyman, 2005; Olsen, 2007; Bumpus and Liverman, 2008; Leahy, 2009).<sup>24</sup> Studies suggest the social contributions of CDM projects are disappointing (Ellis et al., 2004; Lohmann, 2006; Olsen, 2007; Sutter and Parreño, 2007; Gilbertson and Reyes, 2009). Too often opportunistic investors chase profits rooted in (1) unplanned perverse incentives within nascent international carbon policy, or (2) the capture of GHG emissions from massive livestock farms, plantation agriculture, mega-dams, landfills, or other projects with associated adverse social and ecological consequences (Haya, 2007; Global Forest Coalition, 2008; Pottinger, 2008; Gilbertson and Reyes, 2009). Baldwin (2009) documents how global carbon policies enact a hierarchy of racial difference that marginalises indigenous peoples and livelihoods. Representatives of the Indigenous Environmental Network and the Society for Threatened Peoples (2008) call emissions trading, as it has been done thus far, a form of neo-colonialism, arguing it allows industrialised countries and transnational corporations to continue polluting while restricting local access to lands and resources.

Indigenous peoples often feel marginalised from the UNFCCC policy formation process (Leahy, 2009). After indigenous delegates were denied access to talks at the Bali Climate Change Conference in 2007, photographs of indigenous representatives were circulated with symbolic gags across their mouths reading "UNFCCC" (figure 2). A central complaint is that UNFCCC negotiating structures lack a permanent seat for an indigenous representative.

Figure 2. Indigenous voices gagged (Langelle/Global Justice Ecology Project).



In spite of this lack of representation and other constraints to indigenous participation in carbon policy decision-making, there are economists who argue that indigenous peoples should not miss out on carbon market opportunities (Altman, 2001; Forest Carbon Partnership Facility, 2009). Market advocates may assume that recognition of native rights can be a starting point for equitable distribution of market returns. However, some CDM projects do not acknowledge they are located on indigenous lands, even when tenure disputes exist with inhabitants (Finley-Brook, 2009).

<sup>24</sup> See <http://ClimateEthics.org>.

## Chan 1 and Bayano dams seek Clean Development verification

By April of 2010 there were 2125 CDM projects registered and more than 4000 projects in the verification pipeline.<sup>25</sup> Dams are a common methodology contributing approximately a quarter of CDM projects globally (Haya, 2007); however, nearly half of all CDM projects in Central America and Panama are linked to hydroelectric production. Eighteen large-scale dams from this area have applied for CDM verification. Large Latin American dams have weak claims to additionality (i.e. that they need CDM support to break down existing barriers) since the infrastructure was built in most cases before any carbon trade occurred and the technology employed was developed before the CDM was initiated (Lokey, 2009). Hydropower dams have historically been considered eligible for carbon credits because they are perceived to produce electricity with fewer emissions of GHG, despite research indicating that some reservoirs – especially those in tropical climates – can emit GHG like methane at levels equivalent to fossil-fuel power plants (WCD, 2000; McCully, 2001).

Carbon markets provide economic incentives for developing states and transnational corporations to seek hydro development partnerships (Streck, 2004). Panama implemented government subsidies to promote renewable energies in 2004 and experienced a boom in hydroelectric concession requests from private companies (Sandoval y Novoa, 2009). At the same time, with support from the US Agency for International Development (USAID), Panama aggressively promoted a large portfolio of potential CDM projects (Sempris, 2002; Berrocal, 2007). Altogether 82% of all Panamanian CDM proposals thus far are linked to dams. Six Panamanian CDM projects have been verified and 15 more, including three AES dams, await a UNFCCC decision.

A firm looking to register a project with the UNFCCC must have a stamp of approval from the host government, supposedly as a means to assure sustainability. The Panamanian state requires firms engaging in CDM trade to transfer 20-30% of related revenue to the Environmental Authority, ANAM. This situation creates a direct benefit to the government institution responsible for CDM approval.

Reviews of CDM projects in Central America (Finley-Brook, 2008, 2009) reveal evaluation processes are too narrow to adequately assess sustainable development. Data supporting project verification are generated mainly from private-sector self-reporting. Developers only briefly mention social impacts, most often in ways that paint their proposal in a favourable light. Even CDM projects that have broad implications for local resource use and where customary subsistence practices will be altered provide few details concerning social impacts. Monitoring reports filed with the UNFCCC after approved carbon trade also provide little information on how projects impact people and seldom record if the social programmes cited before verification continue.

CDM project proposals seldom mention land tenure. Dam projects in indigenous territories, including Xacbal in Guatemala and Barro Blanco in Panama, requested CDM verification without being forthright about existing land-tenure conflicts. Tenure conflicts have been recorded on CDM-verified wind farms located on indigenous lands in Colombia and Mexico (Indigenous Environmental Network and Society for Threatened Peoples, 2008; Dyer, 2009). Land tenure and livelihood risks remain poorly understood as international policy-makers negotiate the expansion of forest-based carbon sequestration and storage programmes (Global Forest Coalition, 2008; Anderson, 2009).

CDM assessments are, for the most part, technical reports that focus on the measurement of Certified Emissions Reductions (CERs). In spite of the emphasis on the quantification of CERs, CDM critics argue carbon credit exchanges are so problematic (e.g. with perverse incentives, double counting, exaggerated baselines, indirect emissions, externalities, future sales of derivatives, etc.) that they do little to mitigate climate change (Lohmann, 2006; Haya, 2007; Pottinger, 2008). Nonetheless, verification of GHG emissions in CDM projects is rigorous when compared to procedures for recording social, economic, and ecological impacts. Verification of non-emissions-related themes relies heavily on

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<sup>25</sup> See <http://cdm.unfccc.int/Projects/index.html> for updates. Questions over the quality and quantity of GHG reductions exist in many cases. Multiple large certification agencies, including SGC UK, the certifier of Bayano dam's CDM proposal, have been suspended from UNFCCC verification for poor oversight practices (Goldstein, 2009).

projects complying with what are often weak domestic standards. For example, AES-Panama did not need to complete an Environmental Impact Assessment (EIA) for the Bayano dam until 2001. The dam was categorised at this point as requiring the lowest level of public consultation. This classification came after officials argued the project did not cause harm, since the damage had already been done in the past (SGS UK, 2006). Later, Bayano's streamlined 2001 EIA was used to demonstrate compliance with CDM requirements.

Public participation in CDM planning in Central America is poor, and CDM processes provide stark contrast to WCD recommendations. The following conclusions are drawn from analysing descriptions of public consultations from the Project Design Documents (PDDs) of nearly 50 CDM projects verified in Central America and Panama between 2006 and 2009 (Finley-Brook, 2008, 2009). A meeting where project officials explain their plans to local public officials, NGOs, and civilians is a standard practice before CDM verification. CDM applicants are expected to document any concerns raised at the meeting and report how they addressed them. Photographs of these highly staged consultations are frequently used to demonstrate that CDM projects are participatory. Yet we suggest many Central American CDM consultations could often be more accurately categorised as public-relations exercises rather than evidence of participatory practices. Furthermore, development consultations can sometimes be used to minimise or contain dissent (Cornwall, 2004; Gaventa, 2004). For example, when conducted in Central America, these events are often organised in urban locations, meaning low-income, rural populations may experience difficulties finding transportation. There are cases, including Chan 1, where local populations opposed to the project did not attend the formal stakeholder consultation organised by the developer, and thus their perspectives were not recorded as part of the CDM proposal. Some consultations occur prior to rural populations becoming aware of the CDM project.

A second round of public input is solicited during a CDM commenting period. Comments are gathered for 30 days predominately through a web interface. Finley-Brook (2008) found less than 10% of Central American CDM projects received online comments.<sup>26</sup> The following statement from the CDM application of a large-scale dam project in Guatemala succinctly captures what appears to be a common strategy: "since no comments were made, no action was taken". A lack of comments may incorrectly be interpreted as demonstrating all stakeholders are content. Finley-Brook (2008) recorded public opposition to projects covered in national news sources in locations where on-line comments were not recorded. The month-long window to make entries passed without comment for Bayano in 2006 and for Chan 1 in 2008.

The CDM paperwork filed for Bayano and Chan 1 dams did not mention uncompensated social and environmental impacts, land-tenure conflict, or social opposition (SGS UK, 2006; TÜV-SÜD, 2008). In Chan 1's CDM application AES-Changuinola cites "ample support" from local populations (TÜV-SÜD, 2008), but when the UN Special Rapporteur on indigenous rights visited the project area he found "significant discontent" (Anaya, 2009).

The distribution of returns from market-based carbon mitigation to local populations appears poor in most Central American cases (Finley-Brook, 2008, 2009). Symbolic donations to schools, clinics, or infrastructural projects are often cited as sufficient justification to categorise CDM projects as providing positive social change. A few select transfers to local institutions are allowed to represent support for sustainable development in spite of the lack of more systematic analyses of livelihood, governance, or cultural changes. However, we found dam-building created institutional upheavals in villages surrounding both Panamanian case studies and fed internal conflict in Chan 1 and other proposed CDM hydroelectric projects.

AES-Panama retrofitted technology in the Bayano plant, but did not address past violations of indigenous rights or other injustices in their CDM proposal. Although some damage is irreversible, Kuna and Emberá populations believe they should be indemnified for loss of subsistence production and

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<sup>26</sup> Potentially demonstrating the digital divide, the majority of comments came from climate scientists or NGOs in industrialised countries.

decades of tenure conflict (Huertas and Pacheco, 1999; Aguirre, 2001). Direct distribution of carbon market returns to local populations was not proposed in documents sent to the UNFCCC for either Panamanian dam, and is exceedingly rare in CDM projects at a regional level. In contrast, Chan 1 proceeds will assist the Panamanian Environmental Authority, ANAM, to discourage local people from accessing lands and resources they utilised prior to the creation of the Palo Seco Forest Reserve. There could be added pressure on resources in the reserve and the areas surrounding since AES-Changuinola's construction of access roads may attract colonists. AES is promoting tourism around Chan 1's reservoir (Blanco, 2009), and tourism developers may also compete with local populations for control over land and resources.

Bayano and Chan 1's CDM proposals exclude significant ecological impacts, including threats to rare and endangered species (McCully, 2004; Jordán and Galvin, 2008; Lohmann, 2008). In the case of Chan 1, dam construction will require 1000 tonnes of cement, a product with a high carbon footprint brought in from distant locations by ship and requiring dock expansion. Explosives were used near the dam's pump house to blast a tunnel 4 km long and 12 m across. The establishment of a 1300 ha reservoir free of emission-releasing debris will require cutting and clearing biodiverse, carbon-storing forest from the Palo Seco Reserve before flooding.<sup>27</sup> Dam reservoirs release GHG emissions, particularly in large-scale projects located in tropical environments, making 'clean' energy assertions controversial (McCully, 2001; Pottinger 2008).

At the time of writing, we remain uncertain if the Panamanian case-study dams will successfully sell carbon credits; notwithstanding, carbon markets have played a prominent role in promoting Chan 1's construction. During the past 18 months in the CDM pipeline, AES-Changuinola buoyed arguments for Chan 1 with climate-change mitigation justifications. Even if AES' Panamanian dams are rejected by the CDM, developers may still sell credits on voluntary carbon markets, where verification standards are often less rigorous (Lokey, 2009).

Carbon mitigation initiatives may expand social injustice and ecological degradation if determined by markets (Lohmann, 2006; Olsen, 2007; Global Forest Coalition, 2008; Pottinger, 2008; Gilbertson and Reyes, 2009). Bayano and Chan 1 cases suggest the need to improve UNFCCC reporting standards and to spell out human rights commitments. In Panama, internal state regulations accepted for CDM verification appear to be treated as checklists rather than a means to promote sustainable and ethical development. This research finds Bayano and Chan 1 dams place unfair burdens on vulnerable populations, including restrictions on customary agricultural practices seen to threaten hydroelectric production (see also Indigenous Environmental Network and Society for Threatened Peoples, 2008). An independent study utilising more holistic cost-benefit equations and taking into consideration social, cultural, economic, and environmental impacts opposed construction of Chan 1 dam (Cordero et al., 2006).

## TOWARD ETHICAL BEHAVIOUR IN HYDRO PROJECTS AND CLIMATE-CHANGE MITIGATION

At the 2009 Indigenous Peoples Global Summit on Climate Change, the President of the UN General Assembly, Miguel d'Escoto (2009), assured participants that he asked the UNFCCC to protect international informed consent norms during verification of CDM projects. Indigenous participants still issued 14 calls to action at the end of the summit, often criticising the UNFCCC's current path.<sup>28</sup> One call was for the UNFCCC to support a binding emissions reduction target for industrialised countries of 95% by 2050 in order to address the root causes of climate change. Another call asked states to abandon market-based carbon trading and the CDM, promoting small, local, and decentralised alternative

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<sup>27</sup> Some wood will be used for house-building and local artisanry. AES-Changuinola does not have permission to sell the harvested timber, since it originates from a protected area.

<sup>28</sup> See [www.indigenoussummit.com/servlet/content/declaration.html](http://www.indigenoussummit.com/servlet/content/declaration.html)



energy projects instead. Globally more than half of CDMs are large-scale. The majority in Central America have foreign sponsorship, many times from transnational corporations (Finley-Brook, 2008).

The UNFCCC allows each country to define if CDM projects are sustainable: this stance was designed to respect national sovereignty and honour the Kyoto Protocol's structure of differentiated responsibilities between countries at different stages of development. Yet, compliance with domestic requirements may not be enough to satisfy international human rights standards (Anaya, 2009). Furthermore, in the case of Panama, the UNFCCC's non-interventionist ideals may create tension with other intergovernmental initiatives. Multilateral commissions are pressuring Panamanian officials to comply with the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), the UNESCO World Heritage Convention, and the Ramsar Convention (Barborak et al., 2008; Anaya, 2009). Violations of these international accords appear to be occurring in some of the same CDM projects the UNFCCC allows national officials to define as sustainable.

Some carbon market actors have recognised the need to implement more rigorous social and environmental standards for dam projects. In 2004, with its Linking Directive, the European Union (EU) mandated compliance with WCD standards for dam projects over 20 megawatts to be eligible to sell certified emissions reductions (CERs) in the EU's GHG Emissions Trading Scheme (ETS).<sup>29</sup> This policy brought two main results. First, some states, including Germany and the United Kingdom, circulated frameworks for determining if dams were compliant with the WCD's proposed reforms. Although this is an important exercise, these regulatory guidelines were significantly weaker than WCD recommendations, and monitoring mechanisms remained poorly developed. The second result from the Linking Directive was to dampen interest among European carbon brokers in trading CERs from large dams due to uncertainty about the future value of these credits. Nevertheless, since WCD compliance has not been mandated broadly in carbon markets, the Linking Directive had limited impact on improving standards in the hydro industry globally. However, it has inspired international investment banks overseeing carbon credit funds and EU member states to assess and work with WCD standards and therefore may represent an incremental step toward creating stronger sustainability guidelines for emissions trade and hydro development.

Development decision-making processes are slowly being forced open by local resistance, multi-scale NGO networks, fact-finding commissions like the WCD, and multilateral monitoring and oversight bodies, such as UN and OAS human rights commissions. Guidelines for business practices that respect human rights are widely available, and expectations for compliance grow (Waddock, 2004; Vogel, 2005; Ruggie, 2008; Anaya, 2009). Nonetheless, court sanctions for indigenous rights violations, such as those determined by the OAS, have been relatively light. Compensations for former misdeeds are usually slow to be negotiated and remain small enough not to provide a significant incentive for reform.

Our Panamanian case studies teach us that it is important to clarify liability when projects are bought and sold. The responsibility of AES-Panama to help resolve land-tenure conflict or provide compensation for Bayano's earlier impacts is unclear. Chan 1's consultations with local populations became convoluted with the purchase of another firm's concession after initial negotiations had already occurred. Confusion may also exist when hybrid partnerships emerge between state agencies and private firms. Although OAS cases against states abound, it is more difficult to bring private firms to international courts when they violate indigenous rights (Miranda, 2006/07). However, UN indigenous rights expert James Anaya (2009) suggests companies and state actors both have the responsibility to assure their partners meet legal and moral obligations.

Our case studies demonstrate a strengthening of cross-scale civil society opposition toward large-scale dam construction, particularly in cases exhibiting human rights violations. New types of digital communication and a blossoming of multimedia outlets feed these trends. Yet the media wars around the Chan 1 case showed WCD recommendations are not fully actualised because the specifics of good and 'best' practices remain highly contested. Two additional Commission goals were to insure inclusion

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<sup>29</sup> See <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32004L0101:en:html>

and reduce conflict; our cases show there is much work remaining in both areas. In addition, similar to the way in which the WCD widened participation in hydropower decision-making, the global community needs to assure the broadening of climate governance to encourage social justice in GHG mitigation projects. The dams under analysis demonstrated profoundly unequal spatial distributions of costs and benefits.

An important step forward toward levelling the playing field between development stakeholders is to require indigenous land titling before any resource concession is granted. Demarcation is a highly political process that may often fall short of the spirit of internationally recognised human and indigenous rights standards. Even with participatory practices, demarcation may increase institutional, territorial, and inter-ethnic conflict in the short term (Finley-Brook and Offen, 2009). Given the existence of competing claims to water and other resources, the Panamanian process will likely require outside monitoring. UN and OAS pressure on Panamanian officials to respect human rights deserves global attention, since the Bayano and Chan 1 cases may create important precedents for more ethical governance of resource development in indigenous territories.

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