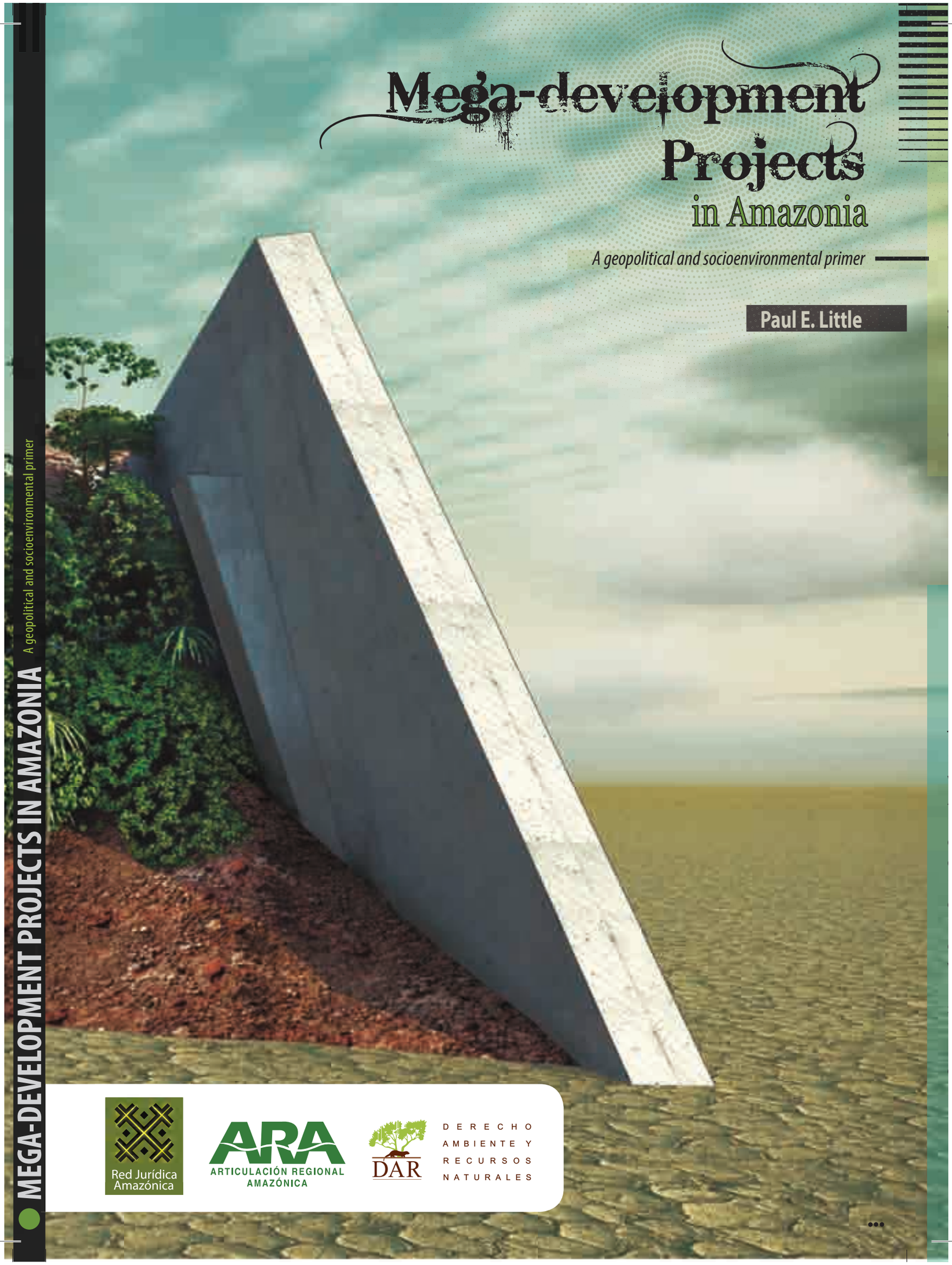
Mega-development Projects in Amazonia

A geopolitical and socioenvironmental primer

Paul E. Little



MEGA-DEVELOPMENT PROJECTS IN AMAZONIA A geopolitical and socioenvironmental primer

Red Jurídica Amazónica

ARA ARTICULACIÓN REGIONAL AMAZÓNICA

DAR DERECHO AMBIENTE Y RECURSOS NATURALES

MEGA-DEVELOPMENT PROJECTS IN AMAZONIA

A geopolitical and socioenvironmental primer

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PRESENTATION

Opportunities that professional life offers to present a job selection in one's and diverse organization's name and effort as we are now presenting from the recognized anthropologist Paul Little, entitled "Megaprojects in the Amazon. A geopolitical and socio-environmental analysis with proposals of better government for the Amazon", that analyzes opportunities and challenges that one of the most important tropical rainforests in the planet is living are few.

The Amazon is changing as the continent history. After twenty years, we do not have the same threats or the same opportunities so the Amazon and its ecosystems are kept or produce the necessary wealth for all the citizens from the Amazon. The inclusion of the Amazon properties to the market, the game of energy global demand and the emphasis of the exporter primary model in the Amazon countries, including Brazil encourage that more megaprojects be promoted from national interests (for instance, through BNDES financing), bilateral convergence (for instance, Peru-Brazil Energy Agreement) or a regional architecture (UNASUR/Cosiplan).

The Amazon Lawyers' Network (RAMA) and Rights, Environment and Natural Resources (DAR) in order to promote the sustainable development in the Amazon, decided to foster this research so it can serve as a path for future networks and parties articulations in pursuit of necessary social agreements for the Amazon preservation.

RAMA, a regional lawyers' network devoted to the Amazon defense and protection, its nature and indigenous people that live there, decided in 2012, in its Coordination Committee meeting, its new government structure that was necessary to have an amazon change strategy based on investments that could become an opportunity or a threat for these ecosystems. In that meeting it was decided that RAMA would assume the effort of conducting this research through a consultant in order to build an analysis and a strategy that could be coherent and later applied by regional civil society and avoid high prices from the investment challenges in the Amazon.

In his study, the author refers to the need that all the parties make a pact for their governance to preserve the Amazon. Paul Little refers to "Energetic Governance" as these pacts will ensure, for instance, that the energetic model achieve the objectives defined by social pact that produces a public politics; and on the other hand, the rising of environmental and social standards that will let apply

criteria to reduce environmental, social, politics impacts, etc and give confidence to the investment as well as the sustainable development so they can be compatible in the Amazon future.

As studies as *Amazonía Peruana al 2021* (Peruvian Amazon 2021) or recent *Loreto Sostenible al 2021* (Sustainable Loreto 2021) both prepared and led by Marc Dourojeanni*; the Amazon Atlas by RAISG; or *Amazonía 2030 (*Amazon 2030), from Colombia; other organizations have been monitoring the investments with a regional purpose (International Panel of Environment and Energy in the Amazon, ARA, RAMA, RLIE, IR, IBASE, DAR) the purpose of articulating three intervention levels:
(1) Project cycle (under opposition strategies vs. mitigation of project impacts); (2) National policies (planning, standards, bonus, etc.); and (3) International Financing (Free Trade Agreements, binational agreements, UNASUR/ COSIPLAN/BNDES).

Although this fact, it has been really difficult to ensure that new investment patterns, their origin and market investment flow are conducted under preservation traditional strategies, without adaptation and commodities market knowledge and especially, without prior political analysis (identification of parties and strategies) that lets us measure the asymmetry among the parties and achieve necessary changes for regional sustainability, especially in the Amazon.

An important second element to be taken into consideration is the "Amazon Development for Amazon citizens" model, a development proposal from the inside, a way to prove, through information and scenarios projections which one would be the best design to build comprehensive tools that allow sustainability solutions of development model not oriented to satisfy the foreign demand but the Amazon countries, something that is still pending in our country.

A third element is the clarity used to present the "Mitigation Hierarchy" in strategies proposals. There is a lack of maturity of civil society organizations to recognize their positioning and understand the effectiveness of an "opposition" strategy from investments and "improve conditions for its sustainability" at the best possible scenario.

There are many elements that involve this analysis and not necessarily agree, however, the author identifies a series of change agendas for the best Amazon governance: indigenous agenda (prior consultation and constitutional recognition of indigenous rights); promotion of safeguards promotion such as the Strategic Environmental Assessment (EAE) regarding the flow of Brazil's BNDES promoted investments and Chinese investments; and the improvement of management in the government levels: subnational (environmental management); national (violation of rights in politics); bilateral relations (Peru-Brazil Energy Agreement) and regional (citizen participation at UNASUR).

We would like to firstly thank the RAMA Coordination Committee: Ivan Bascopé (General Coordinator); Ricardo Verdum (Brazil); Marco Mendoza (Bolivia); Bolívar Beltrán (Ecuador), Luis Bello (Venezuela), Ramón Laborde (Colombia).

* See http://www.dar.org.pe/archivos/publicacion/Loreto2021_completo2.pdf

Also, we thank Karina Pinasco's support, from AMPA ARA Perú, Richard Smith, from IBC; Beto Ricardo, from ISA; especially RAISG, for the maps given for this publication.

Special thanks to Paul Little for his effort and dedication in reflections and recommendations for the Amazon improvement. Paul has been accompanying RAMA in this learning process which has let us enrich our analysis and prioritize incidence strategies that involve establish a better safeguards regional system related to major needs that our countries current politics demand: improvements and setbacks regarding design and implementation of prior consultation and in investments environmental management.

We also thank Francisco Rivasplata and Mario Samamé from the Amazon Area, and Israel Gordaliza, from the DAR Knowledge Management and Communications Area, for their support that has complemented and accompanied the information building process along with other allies to prepare this publication.

Special thanks to the Coalition of the Flemish North South Movement - 11.11.11, the Rainforest Foundation Norway RFN and the Charles Stewart Mott Foundation for the support to this work and activities from RAMA during these years and particularly this first year as a new more democratic, participative structure dedicated to promote changes from regional and national public politics has initiated.

Finally, special greetings to Stian Bergeland from RFN, and his continuous effort that has contributed to RAMA's promoting. Thus, we hope this publication and its messages help improve public management of natural resources in the Amazon or Pan Amazon, an area full of possibilities and opportunities for the development of our countries.

Lima, junio de 2013

César Gamboa Balbín**
Editor

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Executive Summary

MEGA-DEVELOPMENT PROJECTS IN AMAZONIA

A geopolitical and socioenvironmental primer

Intense global demand for commodities and energy has led to the rapid expansion of monocultures for biofuels and of large-scale hydroelectric dams and mining activities throughout the entire Amazon Basin, which has transformed the region into a new global economic frontier. One of the most significant changes in this wave of Amazonian frontier expansion is that outside interventions, particularly mega-development projects, are being planned and implemented at a heretofore unheard of pan-Amazonian scale. In addition, the magnitude of the socioenvironmental impacts caused by these projects are of a qualitatively higher level than that other waves of frontier expansion due to the size of the projects, the large number of them that under simultaneous construction and the large amount of capital invested in them.

The first decade of the 21st century experienced a major restructuring of the financing of development projects in Amazonia, stemming from the economic crisis of the industrialized countries, together with the continued growth of the economies of emerging countries, notably the so-called BRICS (Brazil, Russia, India, China and South Africa). During this same decade, Brazil and China forged new national development strategies based in the policies of the globalization of national companies and the establishment of regional hegemonic spaces dominated by their national capital investments. The Brazilian National Economic and Social Development Bank (BNDES) and the Chinese Development Bank grew rapidly in this period and became the largest investors and creditors of mega-development projects in Amazonia.

Two types of mega-development projects have been delineated for analytical purposes: Infrastructure projects and Extractive projects. Mega-infrastructure projects operate primarily with public capital within the framework of bi-lateral agreements between countries and, as such, their processes of decision-making become part of the public arena for debate. Mega-extractive projects, on the other hand, usually operate with the sphere of private capital within the framework of free-trade treaties and agreements and the principal instruments for public control are the concession and contracting processes. In spite of these differences, both types of projects are currently experiencing a phase of rapid expansion and all indications point to the continuation of this trend in the coming years. Large-scale infrastructure projects serve as the primary "enabler" for most other economic activities in Amazonia. With the launching of the Initiative for the Integration of Regional Infrastructure of South America (IIRSA) in 2000,

coordinated by the Inter-American Development Bank (IDB), a new phase of geo-physical integration of South America began. In 2010, the member countries of the Union of South American Nations (UNASUR) took control of the all IIRSA projects and designated its South American Council for Infrastructure and Planning (COSIPLAN) to manage them. The most recent update of its Priority Projects Agenda for Integration contained 544 projects having an estimated cost of 130 billion dollars.

The rapid expansion of the Brazilian economy has generated a growing internal demand for electricity, which in turn has stimulated the Brazilian government to embark on an ambitious program of building hydroelectric dams throughout Amazonia. The Andean countries have also adopted a strategy to increase the generation of hydroelectricity and these policies have gained the interest of foreign investors, particularly from Brazil and China. A total of 17 large-scale hydroelectric dams with a generating capacity of over 1500 MW are projected for Amazonia in the coming years and these will be joined by hundreds of smaller dams. Underlying this wave of dam building lays the strategy of controlling the flow of water in a river from its source to its mouth through the construction of numerous dams along its course.

Extractive mega-development projects involve the extraction of non-renewable resources and form a crucial part of the export and trade policies of Amazonian countries. The expansion of the hydrocarbon industry in Amazonia is concentrated in the Andean countries, where 263 of the 327 petroleum blocks are located. Of this total, only 25% of the blocks are currently in the production phase, indicating that the potential for future expansion of this sector is enormous.

The expansion of the mining sector has been even faster than that of the hydrocarbon sector and is dominated by a small number of large multinational corporations. The mining sector involves a multiplicity of mineral resources – gold, silver, iron ore, copper, bauxite, tin, titanium, vanadium and kaolin, among others – and is much more disperse than the hydrocarbon sector, which has generated a greater number of micro-regional centers of impact. There are a total of 52,974 mining concessions in Amazonia which cover 1,628,850 km2 or 21% of the Amazon Basin. Brazil houses approximately 80% of these concessions, with Peru occupying second place with 11%.

This study identifies seven primary socioenvironmental impacts that mega-development projects are causing at a pan-Amazonian scale, which are derived from the disciplinary perspectives of human ecology, human geography, biology, hydrology, climatology, anthropology and sociology: 1) The forced industrialization of the jungle; 2) The territorial restructuring of Amazonia; 3) Genetic erosion; 4) The end of free-flowing rivers; 5) Potential for ecosystem collapse; 6) Territorial invasions; and 7) Economic and social marginalization.

The weight of these socioenvironmental impacts is distributed in an extremely unequal manner. The majority of the benefits derived from the construction of mega-development projects accrue to economic and political actors external to Amazonia, such as large multinational corporations, the administrative apparatus of national governments and financial institutions. The majority of negative impacts of these same mega-development projects are borne by indigenous peoples, who suffer from the invasion of their territories, and local communities, which suffer from the proliferation of serious social and health problems.

The actions of distinct social groups for the defense of their rights and of nature has led to their constitution as political actors who have developed differing sets of political agendas for change. Three of these agendas analyzed in this study are: the environmental agenda, led by international conservationists; the collective rights agenda, led by indigenous peoples; and the labor agenda, led by unions. The relationships between the environmental and the rights agendas over the past three decades have fluctuated between political alliances, on one hand, and open conflict, on the other hand. Meanwhile, the efforts of the thousands of workers at development projects for gaining better working and living conditions has, up to now, not been linked to the environmental and the rights agendas, since these workers are implicated in the very projects which are destroying in the region.

This study presents a proposal for an alternative development model based in the practices and lessons of the peoples of Amazonia geared towards meeting their needs and aspirations, instead of those of outside economic interests. In order to achieve an *Amazoncentric development*, an endogenous, pan-Amazonian vision of change capable of encompassing the diverse claims of Amazonian social movements and channeling them into a cohesive coalition needs to be developed. The tactics of political action to be employed in the construction of this pan-Amazonian agenda vary from collaborative participation in the formulation of public policies to political mobilization and confrontation.

The following four arenas of political action, together with their respective priority issues, were identified in this study: 1) *Collective rights of peoples*, with two priority issues: the right to Free, Prior and Informed Consent; and the new rights enshrined in national constitutions; 2) *Social and environmental controls and safeguards*, with two priority issues: BNDES and Chinese banks; and Strategic Environmental Assessments; 3) *Socioenvironmental governance*, with three priority issues: influencing the decision-making processes on mega-development projects; the use of the Mitigation Hierarchy; and innovative policies of natural resource management; 4) *Public policies for development and trade*, with three priority issues: the search for new national policies of Amazonian development; the Peru-Brazil Energy Agreement; and the new spaces for citizen participation in UNASUR.

Resumen Ejecutivo

LOS MEGAPROYECTOS EN LA AMAZONÍA

Un manual geopolítico y socioambiental

En la Amazonía, la búsqueda desenfrenada a nivel global para commodities y para fuentes de energía está generando una rápida expansión en el uso de tierras agrícolas para producir granos y biocombustibles, en la construcción de grandes represas hidroeléctricas y en las actividades mineras desparramadas en toda la cuenca amazónica, transformando esta región en una nueva frontera global. Una de las más importantes novedades de la actual ola de expansión de las fronteras amazónicas es que las intervenciones externas en la Amazonía tienen un grado de coordinación pan-amazónica que no fue evidenciado antes, especialmente ellas vinculadas a la construcción de megaproyectos. Además, la magnitud de los impactos socioambientales causados por los megaproyectos es de un orden cualitativamente más alto que en olas previas de la expansión de fronteras debido al tamaño y alcance geográfico de los emprendimientos, al número de proyectos siendo construidos simultáneamente y a la enorme cantidad de capitales inyectados en ellos.

Durante la primera década del siglo XXI, hubo una significativa restructuración del financiamiento de proyectos de desarrollo en la Amazonía, fruto de la crisis económica en los países industrializados y de la consolidación de las economías de los países emergentes, particularmente los llamados países BRICS (Brasil, Rusia, India, China y Sudáfrica). Durante esta misma década, Brasil y China forjaron una nueva estrategia de desarrollo nacional basada en políticas de la internacionalización de las empresas nacionales y la construcción de espacios hegemónicos regionales dominados por sus capitales nacionales. De esta forma, el Banco Nacional de Desenvolvimento Econômico e Social (BNDES) y el Banco Chino de Desarrollo crecieron vertiginosamente y rápidamente ocuparon el nicho de principales inversionistas y prestamistas para los megaproyectos de la Amazonía.

Para fines analíticos, agrupamos los megaproyectos en la Amazonía en dos tipos: los megaproyectos de infraestructura y los megaproyectos extractivos. Los megaproyectos de infraestructura operan principalmente con capitales públicos dentro del marco de los acuerdos bi-laterales entre países y, como tal, sus procesos de la toma de decisiones entran en el espacio público de debate. Mientras tanto, los megaproyectos extractivos tienden a funcionar dentro de la esfera de los capitales privados dentro del marco de los tratados y acuerdos de libre comercio y tienen como sus principales instrumentos de control público los

procesos concesionarios y contractuales. A pesar de estas diferencias, ambos tipos de megaproyectos se encuentran en fase de plena expansión y no hay indicaciones de que van a disminuir su velocidad en los próximos años.

Las grandes obras de infraestructura funcionan como el principal "facilitador" para casi todas las demás actividades de desarrollo económico. Con el lanzamiento de la Iniciativa para la Integración de la Infraestructura Regional Sudamericana (IIRSA) en 2000 bajo la coordinación del Banco Interamericano del Desarrollo (BID), una nueva fase de la integración geofísica de Sudamérica comenzó. En 2010, los países miembros de la Unión de Naciones de Sudamérica (UNASUR) tomaron control del portafolio de proyectos de IIRSA y designaron el Consejo Sudamericano de Infraestructura y Planeamiento (COSIPLAN) a administrarlo. En la última actualización de su Agenda de Proyectos Prioritarios de Integración son 544 proyectos de un monto de inversión estimada 130 mil millones de dólares.

La rápida expansión de la economía brasileña ha generado una creciente demanda interna por energía eléctrica, impulsando el gobierno brasileño a embarcar en un ambicioso programa de construcción de hidroeléctricas en la Amazonía. Los países andinos también han adoptado una estrategia de aumentar la generación de electricidad mediante la construcción de represas hidroeléctricas y esta política ha captado el interés de inversionistas extranjeros, principalmente desde Brasil y China. Hay un total de 17 grandes represas hidroeléctricas con capacidad mayor de 1500 MW previstas para la Amazonía en los próximos anos, junto con centenas de otras represas de capacidad media. Por tras esta ola de construcciones, hay la estrategia de construir varias represas dentro de una misma cuenca hidrográfica y, de esta manera, controlar el flujo de agua del río desde su nacimiento hasta su desembocadura.

Los megaproyectos extractivos forman parte de las políticas de exportación y comercio de los países amazónicos y representan una fuente cada vez más importante de renta para los Estados. La expansión del sector de hidrocarburos en la Amazonía está concentrada en los países andinos, donde se encuentran 263 de los 327 lotes petroleros existentes en la cuenca amazónica. De este total, solamente 25% de los lotes se encuentran actualmente en fase de explotación, indicando el inmenso potencial para la expansión de este sector.

La expansión del sector minero ha sido todavía más rápido que la del sector de hidrocarburos y está dominando por un pequeño número de grandes empresas multinacionales. El sector minero extracta múltiplos recursos minerales – el oro, la plata, el mineral de hierro, el cobre, la bauxita, el estaño, el titanio, el vanadio y el caolín, entre otros – y está mucho más disperso que el sector de hidrocarburos, lo que crea más focos micro-regionales de impactos. En total existen 52.974 zonas mineras en la Amazonía que cubren 1.628.850 km2 o 21% de la superficie de la cuenca. De esta cantidad, Brasil alberga aproximadamente el 80% de ellas, con Perú en segundo lugar con 11%.

El estudio identifica siete principales impactos socioambientales que los megaproyectos están generando a la escala geográfica pan-amazónica, mediante la utilización de las disciplinas académicas de ecología humana, geografía humana, biología, hidrología, climatología,

antropología y sociología: 1) La industrialización forzosa de la selva; 2) La reestructuración territorial de la Amazonía; 3) La erosión genética; y 4) El fin de ríos con flujos naturales; 5) El potencial para un colapso ecológico; 6) Las invasiones territoriales; y 7) Marginalización económico y social.

El peso de los impactos socioambientales está distribuido en una forma extremadamente desigual. Quien lleva la mayoría de los beneficios derivados de la implementación de los megaproyectos son fuerzas económicas y políticas externas de la región, tales como las grandes empresas multinacionales, el aparato administrativo del gobierno nacional y las entidades financieras. Quien lleva la mayoría de los impactos negativos de estos mismos megaproyectos son los pueblos indígenas, quienes sufren de la invasión de sus tierras, y las comunidades locales, que experimentan una acelerada proliferación de graves problemas sociales, sanitarios y de salud.

Las acciones de distintos grupos sociales para la defensa de sus derechos e de la naturaleza condujeron a su constitución en sujetos políticos quienes elaboraron distintas agendas para el cambio. Identificamos tres principales agendas amazónicas para análisis aquí: una agenda ambiental, liderada por los conservacionistas internacionales; una agenda de los derechos colectivos, liderada por los pueblos indígenas; y una agenda laboral, liderada por sindicatos. Las relaciones entre la agenda ambiental e la agenda de los derechos durante las últimas tres décadas han fluctuado entre alianzas políticas, por un lado, y conflictos abiertos, por otro. Mientras tanto, las reivindicaciones de los millares de trabajadores en los megaproyectos para dignas condiciones y beneficios de trabajo han sido, hasta el momento, bastante desvinculadas a las agendas ambiental y de los derechos colectivos, ya que los trabajadores están vinculados, por bien o por mal, con las mismas obras que están provocando la devastación de la región.

El estudio lanza una propuesta para un desarrollo alternativo fundamentada en las prácticas y los aprendizajes de los pueblos de la Amazonía para atender a sus necesidades y aspiraciones, en vez de los intereses económicos ajenos. Para lograr un desarrollo amazoncéntrico se necesita construir una visión pan-amazónica endógena capaz de aglutinar las reivindicaciones dispersas de los movimientos sociales en un movimiento cohesivo. Las tácticas de acción política disponibles varían mucho incorporando tanto acciones colaborativas y de participación en la formulación de las políticas públicas como acciones de movilización, confrontación y resistencia.

Las siguientes cuatro líneas de acción, junto con sus respectivos temas prioritarios, fueron identificadas en el estudio: (1) Los derechos de los pueblos, con dos temas prioritarios: el derecho a la Consulta Previa, Libre e Informada; y los derechos otorgados por las nuevas constituciones nacionales; (2) Salvaguardas y controles sociales y ambientales, con dos temas prioritarios: el BNDES y en los bancos chinos; y los Estudios de Evaluación Ambiental Estratégica; (3) Gobernanza socioambiental, con tres temas prioritarios: incidencia en la toma de decisiones sobre un megaproyecto; utilización de la Jerarquía de Mitigación; y políticas innovadores de gestión de los recursos naturales; (4) Políticas públicas de desarrollo y de comercio, con tres temas prioritarios: busca de políticas alternativas nacionales de desarrollo amazónico; el Acuerdo Energético Perú-Brasil; y los nuevos espacios para la participación ciudadana en UNASUR.

Sumário Executivo

OS MEGAPROJETOS NA AMAZÔNIA:

Um manual geopolítico e socioambiental

Na Amazônia, a busca frenética mundial por commodities e fontes de energia está gerando uma rápida expansão no uso de terras agrícolas para a produção de grãos e biocombustíveis, na construção de grandes barragens hidrelétricas e nas atividades de mineração espalhados por toda a bacia Amazônica, transformando a região em uma nova fronteira global. Uma das novidades mais importantes da atual onda de expansão da fronteira amazônica é que as intervenções externas na Amazônia têm um grau de coordenação pan-amazônica que não era evidentes antes, especialmente ligadas à construção de megaprojetos. Além disso, a magnitude dos impactos sociais e ambientais causados pelos megaprojetos é de uma ordem qualitativamente superior das ondas anteriores de fronteiras em expansão, devido ao tamanho e abrangência geográfica dos projetos, ao número de projetos que estão sendo construídas simultaneamente e ao enorme quantidade de capital injetado neles.

Durante a primeira década do século XXI, houve uma reestruturação significativa do financiamento de projetos de desenvolvimento na Amazônia, resultado da crise econômica nos países industrializados e da consolidação das economias emergentes, em particular os chamados países do BRICS (Brasil, Rússia, Índia, China e África do Sul). Durante essa década, o Brasil e a China forjaram uma nova estratégia de desenvolvimento nacional, com base nas políticas de internacionalização das empresas nacionais e a construção de espaços hegemônicos regionais dominados por seus capitais nacionais. Assim, o Banco Nacional de Desenvolvimento Econômico e Social (BNDES) e o Banco de Desenvolvimento da China cresceram rapidamente e ocuparam o nicho dos principais investidores e credores para a megaprojetos Amazônia.

Para efeitos de análise, agrupamos os megaprojetos na Amazônia em dois tipos: os megaprojetos de infraestrutura e os megaprojetos extrativistas. Os megaprojetos de infraestrutura operam principalmente com capitais públicos no âmbito de acordos bilaterais entre os países e, como tal, os processos de tomada de decisão entram no espaço público de debate. Enquanto isso, os megaprojetos extrativistas tendem a trabalhar dentro da esfera do capital privado no âmbito dos tratados e acordos de livre comércio e têm como principais instrumentos de controle público os processos concessionários e contratuais. Apesar destas diferenças, ambos os tipos de megaprojetos estão em plena expansão e não há nenhuma indicação de que irá desacelerar nos próximos anos.

As grandes obras de infraestrutura funcionam como o principal "facilitador" para quase todas as demais atividades de desenvolvimento econômico. Com o lançamento da Iniciativa para a Integração da Infraestrutura Regional Sul-americana (IIRSA) em 2000 sob a coordenação do Banco Interamericano de Desenvolvimento (BID), começou uma nova fase de integração geofísica da América do Sul. Em 2010, os países membros da União de Nações Sul-americanas (Unasul) assumiram o controle da carteira de projetos da IIRSA e designaram o Conselho Sul-americano de Infraestrutura e Planejamento (COSIPLAN) para gerenciá-la. Na última atualização de sua Agenda de Projetos Prioritários de Integração são 544 projetos que somam um investimento total estimado de US$ 130 bilhões.

A rápida expansão da economia brasileira tem gerado uma crescente demanda doméstica de energia elétrica, levando o governo brasileiro a embarcar em um ambicioso programa de construção de usinas hidrelétricas na Amazônia. Os países andinos também adoptaram uma estratégia para aumentar a produção de electricidade através da construção de hidrelétricas e esta política tem capturado o interesse dos investidores estrangeiros, principalmente do Brasil e China. Há um total de 17 grandes hidrelétricas com capacidade de 1500 MW ou mais previsto para a Amazônia nos próximos anos, junto com centenas de outras barragens de capacidade média. Por trás dessa onda de construções está a estratégia de colocação de várias barragens dentro de uma mesma bacia hidrográfica e, assim, controlar o fluxo da água do rio desde o seu nascimento até sua foz.

Os megaprojetos extrativos são parte das políticas de exportação e comércio dos países amazônicos e representam uma fonte de renda cada vez mais importante para os Estados. A expansão do setor de hidrocarbonetos na região amazônica está concentrada nos países andinos, onde estão 263 dos 327 lotes petroleiros existentes na bacia amazônica. Desse total, apenas 25% dos lotes estão atualmente em fase de exploração, indicando o enorme potencial para a expansão deste sector.

A expansão do setor de mineração foi mais rápido do que o setor de hidrocarbonetos, e é dominada por um pequeno número de grandes empresas multinacionais. O setor da mineração extrai múltiplos recursos minerais - ouro, prata, minério de ferro, cobre, bauxita, estanho, titânio, vanádio e caulim, entre outros - e é muito mais dispersa do que o setor de hidrocarbonetos, que cria mais fontes micro-regionais dos impactos. No total existem 52.974 áreas de mineração na Amazônia que abrange 1.628.850 km2 ou 21% da superfície da bacia. Deste montante, o Brasil alberga aproximadamente 80% deles, com o Peru em segundo lugar com 11%.

O estudo identifica sete principais impactos socioambientais que os megaprojetos estão gerando a escala geográfica da Pan-Amazônia, que são derivados das disciplinas acadêmicas da ecologia humana; geografia humana; biologia; hidrologia; climatologia; antropologia e sociologia: 1) A industrialização forçada da selva; 2) A reestructuração territorial da Amazônia; 3) A erosão genética; 4) O fim de rios com fluxos naturais; 5) O potencial para um colapso

ecológico; 6) Invasões territoriais; e 7) A marginalização econômica e social.

O peso dos impactos socioambientais é distribuído de forma extremamente desigual. Que leva a maioria dos benefícios derivados da implementação de megaprojetos são forças econômicas e políticas externas a região, como as grandes empresas multinacionais, os aparelhos administrativos do governo nacional e as instituições financeiras. Quem leva a maioria dos impactos negativos desses megaprojetos são os povos indígenas, que sofrem com a invasão de suas terras, e as comunidades locais, que experimentam uma rápida proliferação de graves problemas sociais, sanitários e de saúde.

As ações dos diferentes grupos sociais para a defesa dos seus direitos e da natureza fizeram com que eles se constituíssem em sujeitos políticos, elaborando distintas agendas para a mudança. Identificamos três principais agendas amazônicas para análise aqui: uma agenda ambiental, liderada por conservacionistas internacionais; uma agenda de direitos coletivos, liderada por povos indígenas; e uma agenda de trabalhista, liderada por sindicatos. A relação entre a agenda ambiental e a agenda dos direitos colectivos durante as últimas três décadas têm oscilado entre alianças políticas, de um lado, e conflitos abertos, por outro. Enquanto isso, as demandas de milhares de trabalhadores em megaprojetos por condições dignas e benefícios do trabalho têm sido, até agora, bastante independentes para a agenda ambiental e de direitos, uma vez que os trabalhadores estão relacionados, para bem ou para o mal, com as mesmas obras que estão causando a devastação da região.

O estudo lança uma proposta para um modelo alternativo de desenvolvimento baseado nas práticas e os aprendizados dos povos da Amazônia para atender às suas necessidades e aspirações, em vez dos interesses econômicos alheios. Para lograr um desenvolvimento amazoncêntrico, precisamos construir uma visão endógena panamazônica capaz de reunir as dispersas reivindicações dos movimentos sociais em uma coalição coesiva. As táticas de ação política disponível variam muito, incorporando tanto ações colaborativas e de participação na formulação de políticas públicas, como ações de mobilização, confronto e resistência.

Quatro linhas de ação, juntamente com seus respectivos temas prioritários, foram identificadas no estudo: (1) Os direitos dos povos, com dois temas prioritários: o direito à Consulta Prévia, Livre e Informada; e os novos direitos outorgados pelas constituições nacionais; (2) Salvaguardas e controles sociais e ambientais, com dois temas prioritários: o BNDES e os bancos chineses; e os Estudos de Avaliação Ambiental Estratégica; (3) Governança socioambiental, com três temas prioritários: incidencia na tomada de decisões sobre um megaprojeto; utilização da Hierarquia de Mitigação; e políticas inovadoras de gestão dos recursos naturais; (4) Políticas públicas de desenvolvimento e comércio, com três temas prioritários: busca de políticas nacionais alternativas de desenvolvimento amazônico; o Acordo Energético Peru-Brasil; e os novos espaços para a participação dos cidadãos na UNASUL.

INTRODUCTION

The unprecedented boom in the planning and construction of large-scale projects in Amazonia of infrastructure and natural resource extraction – referred to here as "mega-development projects" – is being led by the expansion of global capitalism (including China's communist capitalism) and its search for new resources. This expansion is generating socioenvironmental impacts with grave consequences for indigenous peoples and local communities which depend upon the Amazonian forest for their sustenance.

This study has two principal goals: (1) to offer a broad understanding of the current phenomenon of mega-development projects in Amazonia based in empirical data; and (2) to develop an analytical framework that can guide efforts for change by organizations dedicated to the conservation of the rainforest and the protection of the human and collective rights of indigenous and other traditional peoples.

The techniques employed here include bibliographic, documentary and statistical research; the systematization of this compiled data within both geopolitical and socioenvironmental frameworks; site visits to key organizations; participation in meetings in Colombia[1] , Bolivia[2] and Brazil[3] ; and online accompaniment of networks seeking to influence decision-making processes involving mega-development projects.

The study has two main sections. The first section – Comprehensive Analysis of Mega-development Projects in Amazonia – begins with a contextual analysis of Amazonian frontiers within the current global financial landscape. A typology of these projects is then developed, followed by an analysis of their financing, with emphasis on the cases of Brazil and China. This section concludes with the identification and description of the socioenvironmental impacts of mega-development projects at a pan-Amazonian scale.

The second section – A Pan-Amazonian Agenda for an Alternative Model of Development – begins with an analysis of the constitution of sociopolitical actors, along with their respective claims and demands, in the face of processes of rainforest destruction provoked by developmentalist interventions, with emphasis given to the environmental and collective rights agendas. This is followed by an analysis of the necessary elements for the construction of a pan-Amazonian agenda for an alternative model of development. Finally, a list of priority topics and actions geared toward influencing the development process is presented. Bibliographic and documentary references used in the study can be found at the end of the text.

Given the comprehensive nature of the study, emblematic cases of mega-development projects which have generated serious conflicts and occupied the attention of numerous civil society organizations will not be analyzed in depth here. Many of these cases have taken on international dimensions, such as the construction of the Belo Monte Dam in Brazil; the proposal to build a highway through the Isiboro Sécure Indigenous Territory and National Park in Bolivia; the proposed investment of US$ 4 billion to install the Conga mining project in the Peruvian Andes to extract gold and copper; and the 11th round of international bidding by oil companies on three million hectares of oil concessions in the Ecuadorian Amazon. These, and other, emblematic cases will be mentioned in the text as illustrative cases that support this study's analytical arguments.

1 Seminar-Workshop: Estrategias de incidencia de la sociedad civil en UNASUR y el BNDES, Bogotá, held November 12-13, 2012.
2 Asamblea anual de la Red Jurídica Amazónica RAMA, La Paz, held November 26-29, 2012.
3 II Encontro Pan-Amazônico do Fórum Amazônia Sustentável e Articulação Regional da Amazônia ARA, Belém, held December 5-7, 2012.

SECTION ONE

1

COMPREHENSIVE ANALYSIS OF MEGA-DEVELOPMENT PROJECTS

1. AMAZONIA IN THE CONTEXT OF GLOBALIZATION

1.1. The ebbs and flows of Amazonian frontiers

From the moment the Spanish explorer Vicente Yáñez Pinzón entered the delta of the Amazon River in January of 1500 and kidnapped 36 indigenous people[4], the siege of the Amazon region by outside forces has been incessant, though with ups and downs in its level of intensity. In the ensuing five centuries, this vast tropical forest has witnessed: (i) numerous gold rushes, beginning with the gold rush of the 1570s in the Upper Napo River watershed; (ii) the installation of a cruel system of enslavement of indigenous peoples by the Portuguese colonists which lasted for a century and a half; (iii) the extraction of natural resources of great economic value in particular epochs as seen in the cases of quinine, agave, vanilla, Brazil nuts, animal hides, cacao, resins and sarsaparilla; (iv) the spectacular rubber boom of the second half of the nineteenth century, along with its thunderous collapse in 1912; (v) the expansion of national agricultural frontiers beginning in the 1960s, with the massive arrival of settlers from other parts of Amazonian countries; (vi) the rise of industrial mining activities, beginning with the opening of the large open-pit manganese mine in Amapá, Brazil by Bethlehem Steel in the 1940s, and its subsequent expansion across the Amazon Basin to include bauxite, iron ore, kaolin, cassiterite, silver and, as always, gold; (vii) the booms of oil and natural gas, starting with the first boom in the 1960s and continuing with the even larger one today; (viii) the clear-cutting of large areas of tropical forest for its timber for the export of valuable hardwoods; (ix) the use of large swaths of deforested land for the grazing of cattle on immense ranches; and (x) the rapid rise of industrial-scale fishing in rivers to meet increasing urban demand for fish.

As this brief historical review attests, the concept of "expanding frontiers" is crucial for understanding Amazonia. The many expanding frontiers that the region has experienced over past centuries have been the primary mechanism for socioeconomic and environmental transformation. Expanding frontiers tend to generate serious social conflicts, resulting from the invasion of indigenous peoples' territories by external groups and disputes over access to and extraction of natural resources. Many expanding frontiers emerge in remote areas with a weak State presence, producing situations of violence and misery. Indigenous peoples have consistently been the groups that have suffered most from this expansion, giving continuity to historical processes of territorial invasion and ethnocide.

4 Hemming, John. (1978). *Red Gold: The conquest of the Brazilian Indians, 1500-1760.* Cambridge, MA: Harvard University Press, p. 83.

Rather than speak of a single Amazonian frontier, this study identifies various "micro-regional" frontiers that form around the extraction of different natural resources widely dispersed across the Amazon basin. Each micro-regional frontier has its own historical trajectory, influenced by fluctuating global demand for raw materials and commodities, and harbors a similar internal dynamic: The intensive extraction of one or more products is generally followed by a rapid decline (due, in many cases, to the depletion of the resource) and, after a period of relative calm (of varying duration), another frontier may emerge in the same micro-region with the search for and extraction of a different resource having high global demand. This centuries-long dynamic is analogous to the incessant ebbs and flows of maritime tides, in what I call the phenomenon of "perennial regional frontiers."[5]

1.2. New Amazonian frontiers

The emergence of a large number of Amazonian frontiers today is a function of the world geopolitical situation in which the search for natural resources is entering a new phase. With the depletion of natural resources of easy access, large multinational corporations have started looking for natural resources of difficult access, which require new technologies of exploration and extraction and takes them to inhospitable places, in what has been called the era of resources of "tough access."[6] The extraction of oil from tar sands, shale rock, the depths of the Arctic Ocean and the heart of tropical forests are clear indications of this new phenomenon. The current worldwide natural gas boom, meanwhile, has been led by new, and potentially dangerous, technologies of hydro-fracking. The worldwide search for the seventeen "rare earth minerals" that have become increasingly important to high tech economies is also part of this trend.

Another recent and significant change has been the rapid rise in demand for global commodities, producing a 147% increase in their real price since the beginning of the twenty-first century. Researchers calculate that the world will have an additional three billion middle-class consumers by the year 2030, many of them from the emerging and populous economies of India and China. When this increased demand is placed within the context of the era of resources of tough access, the prognosis is for a commodity boom will last for the next two decades, thereby intensifying the search for resources of tough access.[7]

This frenetic search for commodities and energy has produced a rapid expansion in tropical deforestation. The use of these once-forested lands for the agricultural production of grains and biofuels, the construction of large-scale hydroelectric dams and the installation of industrial and placer mining activities has, once again, transformed the Amazon rainforest into a global resource frontier. Following the model of previous epochs, numerous micro-regional frontiers have emerged, each one supported by its own set of economic and social actors. A quick overview of current regional frontiers in Amazonia would identify: a hydrocarbon frontier in Ecuador, Peru and Colombia; several gold frontiers, including the Madre de Dios department in Peru and the Guianese Shield region of Guyana, Suriname and French Guiana; a soybean frontier in Mato Grosso, Brazil and Santa Cruz, Bolivia; oil palm frontiers in Pará, Brazil and Amazonas department in Peru; a charcoal frontier in Maranhão, Brazil; several hydroelectric frontiers in the Upper Amazon Basin and throughout Brazil; a cattle frontier in the Brazilian Arc of Deforestation region; and numerous timber and mining frontiers scattered throughout the Amazon basin.

In spite of the many similarities with previous expanding frontiers, the current wave of frontier expansion presents several unique qualities. One of the most important differences derives from the fact the external interventions in Amazonia today have a degree of pan-Amazonian coordination that was not present in previous waves, which is particularly evident in current surge in the construction of infrastructure projects. Until recently, the highest level of coordination of Amazonian interventions was at the national level. With the planning and construction of mega-development projects across the Basin, such as interoceanic highways and intra-continental electricity transmission lines, a pan-Amazonian level of public action has emerged.

In the space of just a few years, a large-scale development project can generate major demographic, economic and political transformations of an Amazonian region. With the construction of dozens of such projects in different parts of the Basin, the magnitude of the socioenvironmental impacts is qualitatively higher than previous waves of frontier expansion due to the size and geographic range of the works, the number of projects being constructed and the scale of capital investments injected into them. Large-scale hydroelectric dams are blocking formerly free-flowing rivers and mobilizing tens of thousands of immigrants flooding into sprawling urban centers. Huge industrial mines, to take another example, need large quantities of water which are often taken from areas of communal control of water.

5 Little, Paul. (2001). *Amazonia: Territorial struggles on perennial frontiers*. Baltimore: Johns Hopkins University Press.
6 Klare, Michael. (2012). "The end of easy everything." *Current History*, vol. 111, no. 741, p. 24.
7 Dobbs, Richard et al. (2011). *Resource revolution: Meeting the world's energy, materials, food, and water needs*. McKinsey Global Institute.

Ribeiro identifies "gigantism" as one of the salient characteristics of large-scale projects whereby bigness is valued as having instrinsic worth.[8] The construction of large-scale infrastructure projects favors multinational construction firms and reinforces the reigning practice of top-down planning in which the principal decisions are made by managers and technocrats.[9]

This new emphasis on the pan-Amazonian scale does not eliminate the need for a perspective that contemplates national policies of Amazonian integration. The practice of "internal colonialism,"[10] for example, where colonial relations are internalized within a specific country, continue to exist whenever Amazonia is treated as a resource frontier for "national" development and infrastructure works are planned with national needs in mind, rather than those of local Amazonian peoples and communities. In general, the absence of the voice and interests of the Amazonian population in the majority of development decisions affecting the region is still the norm.

1.3. South American integration

The efforts toward achieving South American integration are an important element of the current geopolitical landscape that have favored the planning and construction of mega-development projects in Amazonia. The dream of "Latin American integration" dates from the epoch of Simón Bolívar and has been attempted in a variety of ways. During the second half of the twentieth century, the region began experimenting with institutional integration, primarily via commercial agreements. Among the entities created over the past forty years, we can mention (together with the year of their creation): the Andean Community – CAN (1969); the Organization of the Treaty of Amazon Cooperation – OCTA (1978); the Latin American Association for Integration – ALADI (1980); the Common Market of the South – MERCOSUR (1991); the Bolivarian Alliance for the Peoples of Our America – ALBA (2004); the Union of South American Nations – UNASUR (2008); and the Community of Latin American and Caribbean States – CELAC (2011). In general, these efforts have not achieved their proposed political goals due to the refusal of States to cede sovereignty over their actions, though the specific case of UNASUR will be addressed later in this study.

There is another type of integration, which has been more successful, that does not depend on formal agreements between governments and operates in the realm of extra-official productive and commercial interactions, in what we can call illicit integration. The most notorious example of this phenomenon is the drug-trafficking trade which has established fluid international connections between production, processing, transport and sale of cocaine (and, to a lesser degree, marihuana and heroin) across the entire Amazon basin. This integrated, secretive drug-trafficking network of agents in all of the Amazonian countries is able to grow the coca plant in some countries, transport the leaves to other countries for processing, with the finished product transported again outside the region to reach consumers in the United States and Europe. In this process, a tight financial network of money laundering comprised of economic agents both within and outside of the Amazon region has become highly efficient. In other words, the narcotraficantes have achieved a level of commercial integration that governments have not been able to attain through formal institutional means.

The type of integration that is most relevant to this study is the terrestrial integration of South America. One of the greatest challenges to international commerce across Amazonia has been to connect the Atlantic and Pacific Oceans via land routes. In order to realize this dream, two geographic obstacles needed to be overcome: cross the vast expanse of the Amazon jungle and then go up and over the Andes mountain range to reach the Pacific ports. The completion of the Southern Interoceanic Highway, which cuts across Brazil, Bolivia and Peru, is a milestone in this effort, since it is the first land connection between the Atlantic and Pacific Oceans in tropical latitudes.

2. A TYPOLOGY OF MEGA-DEVELOPMENT PROJECTS

Mega-development projects in Amazonia can be analytically grouped in two major types: infrastructure projects and extractive projects. Although both types of project are subject to the same set of macro-structural forces outlined above, significant differences exist between them in terms of their financing and decision-making that justify separate analyses.

8 Ribeiro, Gustavo Lins. (1987). "¿Cuánto más grande mejor? Proyectos de gran escala: una forma de producción vinculada a la expansión de sistemas económicos." *Desarrollo Económico – Revista de Ciencias Sociales*, vol. 27, no. 105, p. 9.

9 Escobar is uncompromising in his critique of this concept: "Perhaps no other concept has been so insidious, no idea has gone so unchallenged, as modern planning." Escobar, Arturo. (1995). *Encountering development: The making and unmaking of the Third World*. Princeton: Princeton University Press, p. 194.

10 Chaulot, Yves. (1978). *Estado, acumulação e colonialismo interno*. Petrópolis: Editora Vozes. See also: Whitten, Norman E. Jr. (1976). *Sacha Runa: Ethnicity and adaptation of Ecuadorian jungle Quichua*. Urbana: University of Illinois Press.

2.1. Mega-infrastructure projects

Large-scale works of infrastructure function as the principal "enabler" for almost all other activities of economic development. Nation-states promote infrastructure works as a hallmark of national development and politicians use them to garner votes in remote regions of their respective countries. The mining industry depends upon infrastructure works for the consumption of large quantities of electricity and water needed for their operations, and take advantage of the road network to transport the minerals they extract to ports for export. The oil and gas industry needs pipelines to carry their production to refineries for export or national consumption. Agro-businessmen benefit directly from highways and waterways for the export of their agricultural production. Settlers take advantage of roads to migrate to Amazonia and to gain access to lands for small-scale agriculture. Each one of the above-mentioned economic actors represents a political pressure point that is favorable to the construction of infrastructure works, which makes it increasingly difficult for those social groups that are demanding that the construction of infrastructure works abide by strict social and environmental norms and employ mechanisms of free, prior and informed consent of local Amazonian peoples.

The construction of infrastructure works is an integral part of the actions of all of the national governments of the Basin, and generally is placed under the control of their respective Ministries of Public Works and of Mines and Energy. The planning and construction of mega-infrastructure projects often require the participation of international financial institutions and large multinational construction firms. To facilitate this participation, bi-national agreements for the construction of specific works is the primary framework through which these works are proposed, financed and constructed, as seen in the case of the agreement between Ecuador and China for the construction of the Coca-Coda Sinclair Dam in the Coca River Basin. In recent years, the Peru–Brazil Energy Agreement currently under negotiation has become the broadest and most ambitious of these types of bi-national agreements through the inclusion of a series of major infrastructure works and its long-term scope of fifty years and could serve as a model for other such agreements in the future.

The bulk of financing of mega-infrastructure works comes from public monies, primarily through national development banks and multilateral financial institutions. Most of these loans are given to national governments, which places the weight of interest payments on the budgets of the receiving countries, thereby increasing their external debt. The fact that public funds are being used to finance these works would imply that there are greater possibilities to influence the decision-making about these works within established spaces for national public debate.

Mega-infrastructure works are concentrated in two economic sectors: the transportation sector and the electricity sector.

2.1.1. The transportation sector

The construction of roads and highways in Amazonia by regional or national governments has been, and continues to be, one of the main vectors for the destruction of the tropical forest and the invasion of indigenous territories. The proponents of road building have encountered strong efforts to slow this process in order to establish adequate means of protecting the forest and its peoples. Particular attention will be given here to the planning and construction of interoceanic highways that connect two or more countries.

In the year 2000, a new phase of terrestrial and commercial integration of South America began with the launching of the Initiative for the Integration of Regional Infrastructure of South America (IIRSA) under the auspices of the Inter-American Development Bank (IADB), with financing from IADB and the Andean Corporation for Development (CAF). After ten years of operation, IIRSA had a portfolio of 531 projects, divided into eight hubs of geographic integration, with a total value of US$ 116 billion.[11]

With the transfer of responsibility over IIRSA to the Union of South American Nations (UNASUR) in 2010, the member nations gave control of the portfolio to its South American Council on Infrastructure and Planning (COSIPLAN). Under this new arrangement, Brazil has consolidated its role as the central axis and primary financer of the portfolio of projects. Interoceanic highways represent a key means for the expansion of Brazilian capital and products.

In 2011, the portfolio of IIRSA was updated to include 544 projects with estimated investments of US$ 130 billion. Of this total, 31 projects were selected as part of its Priority Projects Agenda, with a total value of over US$ 17 billion (see Table #1).[12] This list reveals a clear preference for the transportation sector, with the majority of highways moving along an East-West axis that would allow interoceanic connectivity. In addition to highways, the priority list includes waterways, ports and railroad lines.

11 McElhinny, Vince. (2012). "Análisis de las oportunidades de participación en la políticas y programas de UNASUR: Elementos de una propuesta (Documento de discusión)." Presented at the Seminar-Workshop *Estrategias de Incidencia de la Sociedad Civil en UNASUR y el BNDES*, Bogotá, Colombia, November, 2012.

12 IIRSA. (2012). *The UNASUR Integration Priority Project Agenda (API): Progress Report 2012*. Technical Coordination Committee: BID; CAF; Fonplata.

Table 1

UNASUR Integration Priority Project Agenda

Nº	Hub	Name of Project	Countries of project	Cost (in US$ millions)
1	AMA	PAITA - TARAPOTO- YURIMAGUAS ROAD, PORTS, LOGISTICS CENTERS AND WATERWAYS	PE	637.6
2	AMA	CALLAO- LA OROYA - PUCALLPA ROAD, PORTS, LOGISTICS CENTERS AND WATERWAYS	PE	2,719.7
3	AMA	NORTHEASTERN ACCESS TO THE AMAZON RIVER	BR/CO/EC/PE	60.8
4	AND	CARACAS - BOGOTÁ - BUENAVENTURA / QUITO ROAD CORRIDOR	CO/EC/VE	3.350,0
5	AND	COLOMBIA - ECUADOR BORDER INTERCONNECTION	CO/EC	223.6
6	AND	COLOMBIA - VENEZUELA BORDER CROSSINGS CONNECTIVITY SYSTEM	CO/VE	5.0
7	AND	DESAGUADERO BINATIONAL BORDER SERVICE CENTER (CEBAF)	BO/PE	4.0
8	AND	AUTOPISTA DEL SOL EXPRESSWAY: IMPROVEMENT AND REHABILITATION OF THE SULLANA - AGUAS VERDES SECTION (INCLUDING TUMBES BYPASS)	PE	41.2
9	CAP	CONSTRUCTION OF THE SALVADOR MAZZA - YACUIBA BINATIONAL BRIDGE AND BORDER CENTER	AR/BO	23.0
10	CAP	ARGENTINA - BOLIVIA WEST CONNECTION	AR/BO	477.0
11	CAP	PARANAGUÁ - ANTOFAGASTA BIOCEANIC RAILWAY CORRIDOR	AR/BR/CH/PA	2,740.8
12	CAP	FOZ DO IGUAÇU - CIUDAD DEL ESTE - ASUNCIÓN - CLORINDA ROAD CONNECTION	AR/BR/PA	439.7
13	CAP	ITAIPU - ASUNCIÓN - YACYRETÁ 500-KV TRANSMISSION LINE	PA	755.0
14	GUI	REHABILITATION OF THE CARACAS - MANAUS ROAD	BR/VE	350.0
15	GUI	BOA VISTA - BONFIM - LETHEM - LINDEN - GEORGETOWN ROAD	BR/GU	250.0
16	GUI	ROUTES INTERCONNECTING VENEZUELA (CIUDAD GUAYANA) - GUYANA (GEORGETOWN) - SURINAME (SOUTH DRAIN - APURA - ZANDERIJ - MOENGO - ALBINA), INCLUDING CONSTRUCTION OF THE BRIDGE OVER THE CORENTYNE RIVER	GU/SU/VE	300.8
17	HPP	IMPROVEMENT OF NAVIGATION CONDITIONS ON THE RIVERS OF THE PLATA BASIN	AR/BO/BR/PA/UR	1,589.8
18	HPP	PARAGUAY - ARGENTINA - URUGUAY RAILWAY INTERCONNECTION	AR/PA/UR	293.3
19	HPP	REHABILITATION OF THE CHAMBERLAIN - FRAY BENTOS RAILWAY BRANCH LINE	UR	100.0
20	HPP	NUEVA PALMIRA BELTWAY AND PORT ACCESS ROADS NETWORK	UR	15.0
21	IOC	PASSENGER AND CARGO HUB AIRPORT FOR SOUTH AMERICA (VIRU VIRU, SANTA CRUZ, INTERNATIONAL HUB AIRPORT)	BO	20.0
22	IOC	IMPROVEMENT OF ROAD CONNECTIVITY IN THE CENTRAL INTEROCEANIC HUB	BO/BR	388.0
23	IOC	INFANTE RIVAROLA - CAÑADA ORURO BORDER CROSSING	BO/PA	2.0
24	IOC	CENTRAL BIOCEANIC RAILWAY CORRIDOR (BOLIVIAN SECTION)	BO	6.7
25	MCC	NORTHEASTERN ARGENTINA GAS PIPELINE	AR/BO	1.000.0

Nº	Hub	Name of Project	Countries of project	Cost (in US$ millions)
26	MCC	CONSTRUCCIÓN DEL PUENTE INTERNACIONAL JAGUARÃO - RÍO BRANCO BR / UR USD 65,0 CONSTRUCCIÓN DEL PUENTE INTERNACIONAL JAGUARÃO - RÍO BRANCO CONSTRUCTION OF THE JAGUARÃO - RÍO BRANCO INTERNATIONAL BRIDGE	BR/UR	93.5
27	MCC	MULTIMODAL TRANSPORTATION IN THE LAGUNA MERÍN AND LAGOA DOS PATOS SYSTEM	BR/UR	93.5
28	MCC	MONTEVIDEO - CACEQUI RAILWAY CORRIDOR	BR/UR	196,0
29	MCC	OPTIMIZATION OF THE CRISTO REDENTOR BORDER CROSSING SYSTEM	AR/CH	7,0
30	MCC	AGUA NEGRA BINATIONAL TUNNEL	AR/CH	850,0
31	PBB	PORTO VELHO - PERUVIAN COAST CONNECTION	BR/PE	119,0
			TOTAL	17,260.7

Hubs: AMA (Amazon); AND (Andean); CAP (Capricorn); GUI (Guianese Shield); HPP (Paraguay-Paraná Waterway); IOC (Central Interoceanic); MCC (MERCOSUR-Chile); PBB (PerU-Brazil-Bolivia)

The inauguration of the 5,404-kilometer Southern Interoceanic Highway in 2011 was hailed by planners as a victory for South American integration. Yet closer analysis has revealed that the planners failed to identify many socioenvironmental impacts generated by its construction. During the first two years of operation of the highway, legal, international trade on the road has been neglible, far below the projections of planners. There has, however, been a spike in illicit commerce in terms of illegal migration, contraband gold and the drug trade.

The gold boom in Madre de Dios, Peru, mobilized tens of thousands of wildcat gold miners and led to the illegal occupation of large areas of lands. The massive scale and unplanned nature of the mining created a wake of forest destruction and environmental contamination. These miners are supported by a tri-border network of illicit capital which owns the large machinery needed for dredging of rivers and launders profits and evades taxes from the contraband sale of gold on international markets.[13]

The first effort of the Peruvian government to control the chaotic situation led to violent confrontation which left three miners dead in 2011. Puerto Maldonado, which served as the frontier entry point for the miners, was not prepared for the rapid increase in its population and the city bulged to over 200,000 inhabitants. Once a sleepy river port in an isolated part of the Peruvian Amazon, with the building of the road it became the epicenter of an expanding frontier. Although the highway planners classify these impacts as being indirect ones, they are directly derived from social actions enabled by the building of the highway. Many of these impacts would have been readily foreseeable if the tools of the social and ecological sciences had been adequately incorporated into the planning process.

13 *Estado de São Paulo*. (2012). "Rota de pacífico traz negócios y devastação." São Paulo: October 14th.

Map 1: Highways in Amazonia

Fuente: RAISG

2.1.2. The electricity sector

The rapid expansion of the Brazilian economy has generated high demand for electricity. The energy matrix of Brazil is based upon hydroelectricity, providing 77.3% of electricity used in the country.[14] Of this total, 46% is used for industrial use, with the remaining portion divided amongst residential, commercial, public, agricultural, energy and mining uses.[15] In the face of this rising demand, the Brazilian government has embarked on an ambitious program of building hydroelectric dams while placing strong emphasis on dams in Amazonia. Andean countries have also targeted their Amazonian regions as part of their strategy of generating electricity through the building of hydroelectric dams and have captured the interest of foreign investors from Brazil, China and multilateral financial institutions.

These policies have produced proposals for an unprecedented expansion of large-scale hydroelectric dams in pan-Amazonia. Finer and Jenkins[16] have identified 151 proposals for the construction of the hydroelectric dams in four Andean countries (Colombia, Ecuador, Peru and Bolivia), which represents a 300% increase over the 48 existing dams in these countries. Eighty-one (or 54%) of these proposed dams are slated for construction in the Marañón River basin, which encompasses the tributaries of the Huallaga, Pastaza and Zamora Rivers. This study evaluated the environmental impacts of each of the proposed dams using a methodology based in five factors: hydrological fragmentation, connectivity between the Andes Mountains and the Amazon lowlands; building of new roads; installation of transmission lines; and significant environmental damage. Forty-seven percent of the proposed dams where classified as having high potential impact, with 34% having medium potential impact and only 19% classified as having low potential impact.

The Peru–Brazil Energy Agreement, signed by the presidents of these two countries in 2010, proposes the production of up to 7,200 MW of hydroelectricity for national consumption and export to Brazil over the next 50 years. If this Agreement were to be fully implemented, it would result in the construction of fifteen large-scale dams in the headwaters of the Amazon basin with grave consequences for the hydrologic flows throughout this continental watershed.[17] Numerous civil society organizations have criticized the agreement for its lack of transparency in the negotiating process and warn of great potential for generating negative impacts on Amazonian forests, rivers and human communities. The details of this agreement, which has not yet been ratified by the respective Congresses, are still being negotiated, though in a state visit of President Rousseff to Peru in November, 2013, the two presidents pledged to increase bi-lateral trade from the current US$ 3 billion to US$ 10 in five years.

Map #2 shows the priorities for the construction of new hydroelectric dams in the Brazilian Amazon and divides them into three categories: In operation; Under construction; and Proposed. A reading of this map reveals the strategy of constructing several dams within a single watershed, allowing for control the river's waterflow from its headwaters to its mouth. With this control, energy companies would have the ability to manipulate flows of water stored in reservoirs to achieve the maximum generating capacity of the river. Upriver dam companies could then sell "waterflow" to downstream ones, turning it into a commodity.

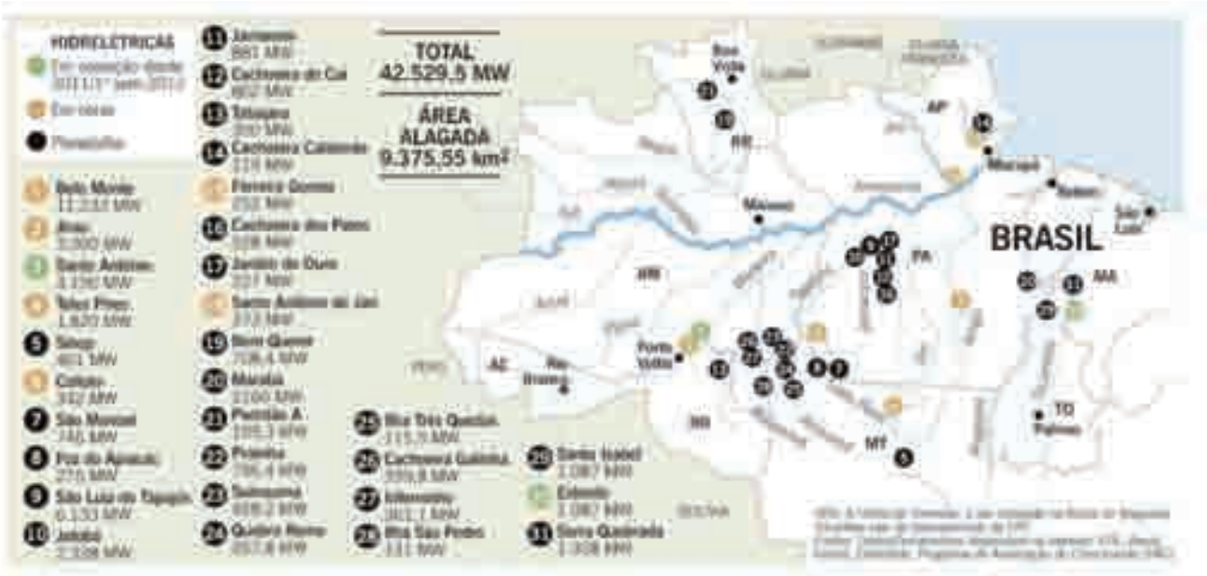
14 Berman, Célio. (2012) "O setor elétrico brasileiro no século 21: Cenário atual e desafios." En: O setor elétrico brasileiro e a sustentabilidad no século 21, 2ª edição. Brasilia: International Rivers Network – Brazil, p. 18.

15 Berman, Célio. (2012) "O setor de eletro-intensivos." In: Ibid., p.29.

16 Finer, Matt and Clinton N. Jenkins. (2012). "Proliferation of hydroelectric dams in the Andean Amazon and implications for Andes-Amazon connectivity." PLoS ONE 7(4): e35126.doi:10.1371/journal.pone.0035126

17 The official name of the agreement is: "Agreement between the Government of the Republic of Peru and the Government of the Federated Republic of Brazil for the provisioning of electricity to Peru and the export of surpluses to Brazil" (see DAR, 2011).

Map 2: New and Proposed Hydroelectric Dams in the Brazilian Amazon



Sources: EPE; Aneel; Ibama; Eletrobrás; Programa de Aceleração do Crescimento (PAC)

When the planned dams for the Brazilian Amazon are joined with those planned for the Andean Amazon region, the magnitude and range of the transformations that their construction would cause becomes evident. In Table #2 a list of the 17 large-scale hydroelectric dams with over 1500 MW of potential generating capacity is presented with the following information: name of dam; potential generating capacity; country; watershed; and current status.

Table 2

Large-scale Hydroelectric Dams in Amazonia (> 1500 MW)

Name	Generating Capacity (MW)	Country	Sub-watershed	Current status
Belo Monte	11.233	Brazil	Xingú	Under construction
Guri	10.325	Venezuela	Caroní	In operation
Tucurí I y II	8.370	Brazil	Tocantins	In operation
Pongo de Manseriche	7.550	Peru	Marañón	Proposed
Jirau	3.450	Brazil	Madeira	In operation
Santo Antonio	3.150	Brazil	Madeira	In operation
Río Madera	3.000	Bolivia	Mamoré	Proposed
Tocoma	2.260	Venezuela	Caroní	In operation
Macagua I	2.190	Venezuela	Caroní	In operation
Caruachi	2.160	Venezuela	Caroní	In operation
Marabá	2.160	Brazil	Tocantins	Proposed
Inambari	2.000	Peru	Madre de Dios	Proposed
Paquitzapango	2.000	Peru	Tambo	Proposed
Teles Pires	1.820	Brazil	Teles Pires	Under construction
El Bala	1.600	Bolivia	Beni	Proposed
Rentema	1.525	Peru	Pastaza	Proposed
Coca Codo Sinclair	1.500	Ecuador	Napo	Under construction

Source: RAISG - *Amazonía Bajo Presión*

One of the most common arguments used to justify this boom in dam construction is that the eastern slope of the Andes Mountains has enormous unused capacity for generating electricity. This geological fact, however, does not consider the potential impact of damning free-flowing rivers for the first time and provoking major disruptions in their flow. A different aspect of this new boom of construction of hydroelectric dams that rarely figures in the calculation of impacts is the need to construct long-distance electricity transmission lines, many of which may pass through indigenous peoples' territories and protected areas. The planning processes of these dams have not been transparent and the analyses of their viability give undue weight to economic considerations in detriment of social and environmental ones.

An excellent interactive site on the Internet, where information on dams planned for construction throughout the world is available in English, Spanish and Portuguese, can be found at: www.dams-info.org. This site incorporates the extensive global data base of International Rivers and was developed jointly by International Rivers, the Fundación Proteger of Argentina and ECOA of Brazil.

Map 3: Hydroelectric dams in Amazonia

Fuente: RAISG

2.2. Mega-extractive projects

Mega-extractive projects are generally financed and constructed by large, private multinational corporations. They form a major part of the international trade of Amazonian national governments and are a significant source of income for these same governments. They give continuity to the reigning economic development model founded in the export of raw materials as a primary means of financing government expenses and tie the trajectory of national economies to the ups and downs of commodity booms. In many cases, these policies contain the seeds of the so-called "resource curse" whereby countries rich in natural resources suffer from high rates of economic inequality and political corruption linked to the use of royalties by political elites.

Mega-extractive projects comprise a key part of each nation's export policies and operate within the confines of their macro-trade policies. Peru and Colombia have established free-trade treaties with the United States and Ecuador is currently negotiating a "commercial association" with the European Union, though this term has been criticized as being a cover for a "free-trade treaty."[18] The current negotiations over a Trans-Pacific Partnership, which includes the United States, Peru, Chile and six other Pacific Rim nations[19] (though is expressly excludes China) is being heavily promoted by the United States as one of the trade priorities of the President Obama, who profiles himself as the "first Pacific president" of the United States.[20]

One of the problems with these treaties, from the perspective of the public control over investments in Amazonian countries, is that they give preferential treatment to private investors and, in the case of conflicts over these investments, establish supra-national forums of conflict resolution in which local Amazonian interests are rarely heard. One of the most worrisome aspects of these treaties are the "investors rights" that allow corporations to file complaints in the above-mentioned supra-national forums whenever they feel that socioenvironmental safeguards are interfering with the commercial right to make a profit. The protections that these investments gain through free-trade treaties also serve to limit the power of environmental and indigenous peoples' groups to influence decisions made by their national governments. Many extractive projects depend almost entirely upon private capital where it is more difficult to influence decisions, since these organizations do not have access to the internal decision-making processes of private corporations.

Extractive mega-development projects are concentrated in two economic sectors – the hydrocarbon sector and the mining sector – with both sectors experimenting moments of rapid expansion in Amazonia.

2.2.1. The hydrocarbon sector

The expansion of oil and natural gas exploration is Amazonia is centered in the Andean countries where 263 of the 327 (approximately 80%) petroleum and gas concessions are located. Four categories of hydrocarbon activity help us understand the expansion process: Potential (areas where deposits might be found); Procurement (administrative requests made); Exploration (prospecting); and Production (extraction). Of the 327 concessions, only 25% are currently in the production phase, indicating a high potential for the expansion of wells in the coming years.[21]

There are approximately 70 oil and gas companies with operations in Amazonia, which hail from all parts of the world, and they include both state firms and private multinational corporations. The four companies that currently lead actual production are Pluspetrol of Argentina, Petroamazonas EP of Ecuador, Perenco of Great Britain-France and Petroriental of China. Those companies that have the largest land areas in the exploratory phase are Petrobrás of Brazil (61,487 km2), Talisman Energy of Canadá (30,491 km2), OGX Petróleo e Gas Ltda. of Brazil (28,744 km2) and Burlington of the United States (27,197 km2).[22]

The production of petroleum in Amazonia is currently concentrated in Ecuador, which started with the perforation of the Lago Agrio I well in 1967 by the Texaco-Gulf Consortium. With its first export of oil occurring in 1972, successive military regimes used oil production as the foundation for national economic development and Ecuador joined the Organization of Oil Exporting Countries (OPEC). Even though a state-run oil company was formed, little care was given by any of the companies working in the region to the way that the oil was developed. The opening roads to the hundreds of wells dotted over the tropical landscape and the building of pipelines facilitated the arrival of thousands of settlers and the invasion of

18 See: Ecuador Decide. (2012). La reconquista europea: ¡Un TLC disfrazado de Acuerdo de Asociación! Quito.
19 Australia, Brunei, Malaysia, New Zealand, Singapore and Vietnam.
20 Barack Obama was born in the state of Hawaii and lived for several years in Indonesia.
21 RAISG – Red Amazónica de Información Socioambiental Georreferenciada. (2012). Amazonía Bajo Presión. São Paulo: Instituto Socioambiental, p. 26.
22 Ibid., p. 26.

indigenous peoples' territories and led to extremely high rates of deforestation in the region. Through a comparison of Figures #1 and #2 below, one can visualize the accelerated rate of deforestation that the northeastern portion of the Ecuadorian Amazon experienced in the lapse of twenty-five years.

Figure 1

Deforestation in Sucumbíos and Orellana provinces, Ecuador - 1977

Source: Landsat

In Figure N°1, taken by satellite in 1977, the light green lines show recently constructed roads that connect the small towns of Lago Agrio, El Eno, Shushufindi, La Joya de los Sachas and Francisco de Orellana.

Figure 2

Deforestation in Sucumbíos and Orellana provinces, Ecuador - 2002

Source: Landsat

In Figure #2, taken by satellite in 2002, the light green areas show the rapid advance of deforested areas and the accelerated expansion of urban centers. The image of the Napo River, located at the bottom of the figure, reveals a high amount of sedimentation in the river when compared to the 1977 image.

The Ecuadorian case offers some lessons about the behavior of oil companies when confronted with efforts to receive indemnification for damages caused by oil development through legal means. The lawsuit against Chevron (originally filed against Texaco which was subsequently purchased by Chevron) began in 1993 in the United States when 30,000 Ecuadorian plaintiffs demanded that contaminated areas be cleaned and compensation for damages, including the loss of lives, be paid. After several years in U.S. courts, the case was sent to Ecuador where, after a decade of litigation, a decision in favor of the plaintiffs was made, ordering Chevron to pay US$ 19 billion in indemnifications (this sum was later reduced to US$ 9.5 billion). Chevron refused to heed this decision and brought a countersuit against the plaintiff's lawyers, accusing them of racketeering. Thus, after twenty years of litigation, the local population continues to live in contaminated areas and has not received anything from the companies responsible.

This experience has not led to much change in the oil policies of the Ecuadorian government. In November of 2012, the Ecuadorian government launched its 11th round of bidding on oil concessions in the central and southern regions of its Amazonian lands, covering over three million hectares of forested land and including the homelands of seven indigenous societies. One year later, after two extensions of the auction, only four companies made bids

in the 11th round, offering hope that much of the area will not yet be opened up for exploration.

It is Peru, however, where the most rapid expansion of oil concessions has occurred and where oil and gas companies are most hopeful of increasing production. Between 2004 and 2009, the total area of the Peruvian Amazon under oil concessions increased threefold to cover 659,937 km2, or 84% its Amazon lands. In the Loreto Department, which is the current site of most oil production in Peru, civil society organizations have proposed that companies use "off-shore" methods of exploring for and extracting oil, thereby protecting much of the forest from the damage caused by road building and settlement by small-scale farmers. Yet another proposal is to use extended reach drilling (ERD) which can be applied to both the exploration and production phases. The use of ERD allows for a spacing of 15 kilometers or more between oil drilling platforms.[23] Meanwhile, Colombia has opened up 193,414 km2, or the equivalent of 40% of its Amazon lands, for oil and gas development, though most of this expansion is currently in the exploratory phase.

Each new oil and gas production site will require the construction of pipelines to transport the product and, depending upon the routes selected, could pass through indigenous peoples' territories and protected areas and would increase the chances of oil spills and water and soil contamination. The current hydrocarbon boom persists with the current energy matrix based in dependence on fossil fuels. In the midst of intense global negotiations concerning climate change and its grave consequences for the future of the planet, including, of course, Amazonia, the use of oil and gas will only further contribute to this potential future debacle.

The Oilwatch network, with headquarters in Ecuador, was one of the first civil society networks in Latin America to investigate and denounce the negative impacts, both environmental and social, of hydrocarbon development in tropical forests and was a pioneer in forging South-South networks of communication and joint action. The Amazon Watch organization, with headquarters in the United States, has launched numerous campaigns against the abuses of oil and gas companies in Amazonia and in 2012 celebrated the decisions by Talisman Energy and ConocoPhillips to abandon their operations in Peru and the refusal by the U.S. Supreme Court to hear an appeal of the Chevron case.

23 Powers, Bill. (2012). "Las mejores prácticas en el desarrollo de proyectos petroleros en la selva". E-Tech International: www.etechinternational.org

Map 4: Petroleum and Gas in Amazonia

Fuente: RAISG

2.2.2. The mining sector

The expansion of the mining sector has been even faster that the hydrocarbon sector and presents similar problems of impact, though with several specificities. While oil and gas dominate the hydrocarbon sector, the mining sector extracts dozens of different minerals located in widely dispersed sites throughout the Amazon Basin. A short list of the principal minerals being extracted in Amazonia includes gold, silver, iron ore, copper, bauxite, cassiterite, titanium, vanadium and kaolin.

Given the geographical dispersion of mining concessions, whenever a large mining deposit is found and extraction begins, a new mining frontier opens up, facilitating the arrival of new economic and social actors and processes of urbanization. Currently, there are at least six such large mining frontiers in Amazonia that are transforming the regions where they are located: Grande Carajás mine (iron ore) in Pará, Brazil, operated by the Vale company; the Pitinga mine (tin) in Amazonas, Brazil, operated by Taboca company; the Juruti project (bauxite) in Pará, Brazil, controlled by the Alcoa company; a bauxite mine in Guyana, run by the Bosai company; Fruta del Norte and Mirador mining projects in Zamora Chinchipe and Morona Santiago provinces in Ecuador; and wildcat gold mining in Madre de Dios, Peru.[24]

There are currently 52,974 mining concessions in Amazonia which cover 1,628,850 km2, or 21% of the total area of the Amazon Basin.[25] Of this number, Brazil has approximately 80% of these concessions, with Peru in second place at 11%, though this situation could change with the discovery of new mineral deposits. Currently, Ecuador is experiencing a rapid expansion in mining operations in the southern region of its Amazonian lands and the Correa administration has established mining as a priority sector for generating State income. The Brazilian National Congress is in the final stages of putting together a new mining law which would allow for mining in indigenous peoples' territories, thus opening up a new set of lands for mining development.

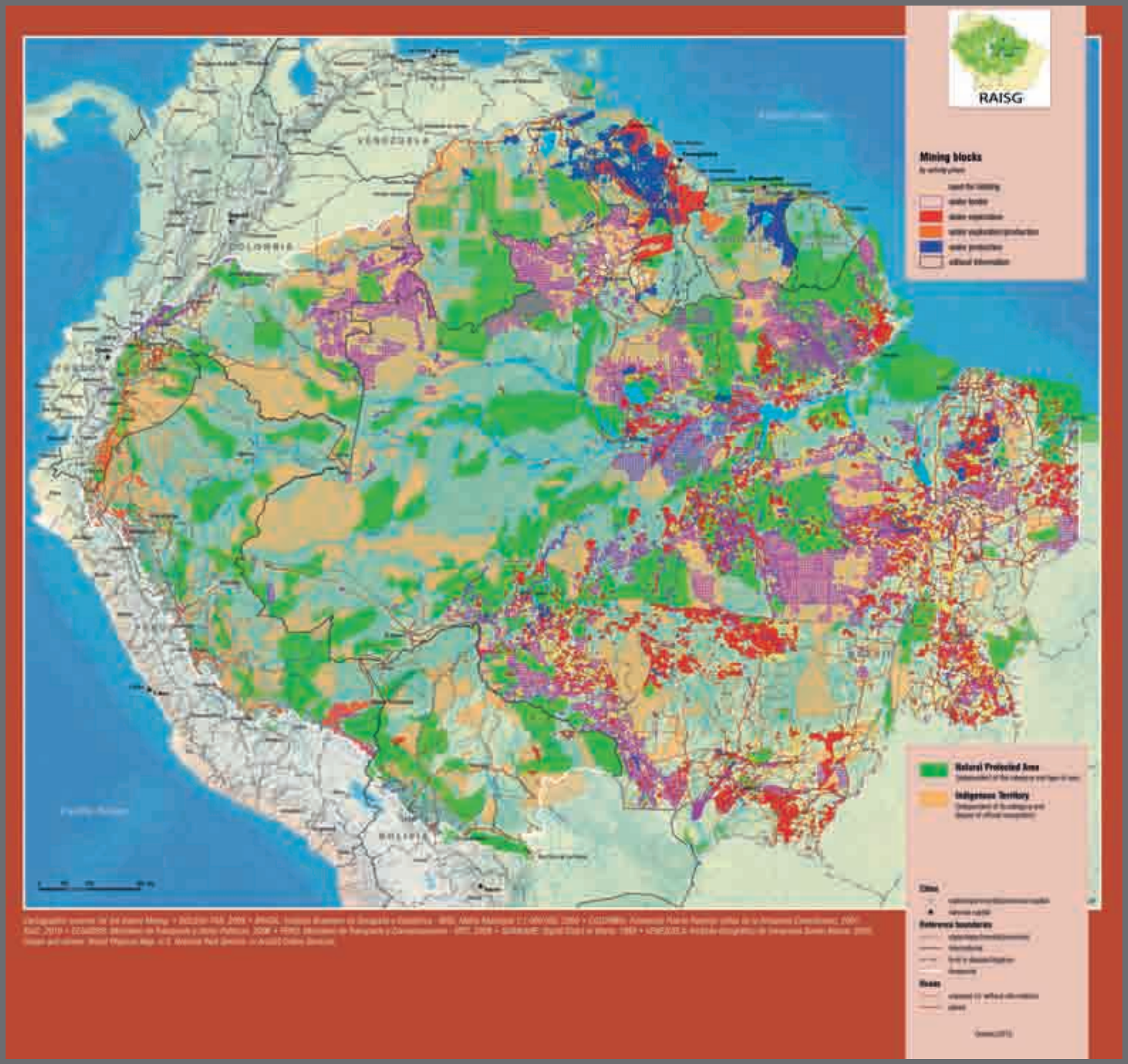
The mining sector is dominated by a small number of very large multinational corporations, almost all of them controlled by private capital. These corporations have been extremely resistant to the adoption of environmental safeguards, in spite of their dismal record of generating negative environmental impacts, notably the contamination of water, air and soils with toxic substances. The most common cases of toxicity in Amazonia related to mining is mercury poisoning, a process which leaves decades-long impacts that can effect several future human generations. Other impacts of the mining sector stem from the large quantities of water and electricity that mega-mining projects require for their operation, with serious consequences for neighboring local Amazonian communities. Still another set of impacts is of a social nature, with rapid and disorganized processes of urbanization, along with the high rates of sanitary and health problems it produces.

Here it is instructive to make a distinction between industrial mining and placer mining. Although both types of activities produce significant environmental impacts, industrial mining operates within the legal framework of concessions, while the majority of placer mining is of a wildcat nature and operates outside of official sanctions.

24 RAISG, *Op cit.*, p. 32-33.
25 RAISG, *Op cit.*, p. 32.

In this way, legal industrial mining ostensibly provides for greater public control through the mechanisms of official granting of operating licenses and through the establishment and enforcement of norms and safeguards for mining operations. A good example of this is the declaration in Colombia of a moratorium on granting of mining concessions in the Colombian Amazon as part of the precautionary principle. However, given the enormous amount of money that industrial mining can generate for the State, these mechanisms are not adequately utilized by national governments, leaving the task of pressuring their respective governments to properly perform their enforcement roles to civil society organizations. Judicial and ombudsman powers within the national systems of Amazonian countries are another space where social and environmental liabilities of mining endeavors can be controlled.

Map 5: Mining in Amazonia



Fuente: RAISG

2.3. A comparative table

While mega-development projects share a common core of attributes, marked differences between infrastructure and extractive projects can also be identified. Table #3 presents a comparative review of these two major types of mega-development projects.

Table 3

Principal Characteristics of the Infrastructure and Extractive Mega-projects

	Mega-infrastructure projects	Mega-extractive projects
Legal frameworks	Bi-national agreements	Free-trade treaties
Public policies	National economic development policies	National trade and export policies
Financing	Public	Private
Control	State	Private
Source of State income	Sale of services	Royalties
Economic sectors	Transportation and electricity	Hydrocarbons and mining
Political pressure points	Planning and decision-making processes	Licensing and contractual processes
Potential for future expansion	Great	Great

The four principal sectorial policies of transportation, electricity, hydrocarbons and mining are an important space for public involvement and influence. This table, however, highlights a higher level of policies – national economic development and trade policies – that are also subject to public debate. Since mega-infrastructure projects operate primarily with public capital, the planning and decision-making processes regarding whether they should or should not be built lies within the public democratic domain. Mega-extractive projects, on the other hand, operate within the domain of private enterprise and, as such, are subject to public review in the licensing and contractual processes. With regard to legal frameworks, mega-infrastructure projects tend to utilize bi-national agreements, whereas mega-extractive projects operate within the supra-national norms of free-trade treaties and agreements. A common attribute of both types of mega-development projects is that they are currently experience phases of rapid expansion which will likely continue into the coming decades.

3. THE FINANCING OF MEGA-DEVELOPMENT PROJECTS

3.1. Brazil, China and the new global financial landscape

In 1990, during the annual meeting of the Group of Seven Industrialized Countries (G-7)[26] in Houston, Texas, German Chancellor Helmut Kohl proposed to the group that it create and finance a program for the protection of tropical forests in South America, in what was to later become the Pilot Program for the Protection of Brazilian Tropical Forests (PPG-7). At this moment in world history, the economic hegemony of these seven countries within the global economy was unquestionable: their decisions oriented the direction of global economic forces. These same countries designated themselves as the "protectors" of the world's tropical forests who, with their financial support, would be able to redirect the reigning model of development in the region.

Just 13 years later, in 2003, the world financial landscape had change dramatically as seen in the debates at the World Trade Organization (WTO) meeting held in Cancun, Mexico. At this meeting, an ad hoc Group of 20 Developing Countries, led by Brazil, India and South Africa, formed a united negotiating block and refused to accept the proposals of the industrialized nations about agricultural subsidies, which eventually led to the failure of the Doha Round of negotiations which had begun in 2001. Since that time, the so-called emerging countries began flexing their muscles and demanded a greater say in the way the global economy was run: the emerging economies had finally emerged. This new arrangement did not necessarily mean that the mechanisms used in world economy would become more equitable or just, only that the nucleus of power had expanded to include a larger number of national economies.

26 Canada, France, Germany, Great Britain, Italy, Japan and the United States.

Figure 3

The Founding Heads of State (India, Russia, China and Brazil) of BRICs at an Early Summit

Source: Internet

Throughout the first decade of the twenty-first century, this block of emerging countries experienced high rates of economic growth and gained even more power within the global economy, creating a new global financial landscape. China, with its high rates of annual economic growth, transformed itself into the second largest economy in the world, surpassing Germany and Japan. During this same period, Brazil maintained a sustained rate of growth which capatapulted its economy to the sixth largest in the world, surpassing Great Britain and challenging France for the fifth position.

Four of these emerging countries formed an informal group, known as the BRICs, an acronym formed from the first letters of their countries' names: Brazil, Russia, India, and China. Later South Africa was included in the group, transforming the lower-case s into an upper-case S. The BRICS countries do not have a formal structure, but at their fifth Summit meeting in Durban, South Africa, in 2013, they approved the establishment of their own Development Bank which would finance projects in their countries, with the possibility of eventually creating their own internal currency. When taken together, the BRICS countries produced (in 2012) 21% of the world's gross economic product, contained 42% of the world's population and housed 45% of the global workforce.

Table 4

Gross Domestic Product and World Rank of the G-7 and BRICS Countries - 2011

World rank	G-7 countries	BRICS countries	GDP – 2011 (US$)
1	United States		15.075 trillion
2		China	7.298 trillion
3	Japan		5.866 trillion
4	Germany		3.607 trillion
5	France		2.778 trillion
6		Brazil	2.492 trillion
7	Great Britain		2.431 trillion
8	Italy		2.198 trillion
9		Russia	1.850 trillion
10		India	1.826 trillion
11	Canada		1.738 trillion
24		South Africa	408 billion

Source: International Monetary Fund

Until recently, much of the money for investments in Amazonia came from multilateral financial institutions such as the World Bank, the Inter-American Development Bank and the Andean Development Corporation. Since 2001, the United States, which dominated the economies of South America for most of the twentieth century, has seen its political and economic power over this continent dramatically reduced, due in large part to its incessant foreign policy interest in the Middle East, including two decade-long wars in Afghanistan and Iraq. Then, the global financial crisis of 2007-09, combined with the crisis of the Euro, had a devastating impact on the economies of the United States and the European Union, leading to a reduction in capital available for foreign investments in development projects.

The BRICS and other emerging countries' economies witnessed a slowdown in their previously high rates of growth during the global crisis, but otherwise strengthened their power within the global financial system. One of the consequences of this new geopolitical landscape was the emergence of new types of "regionalism" founded in a revised set of power relations. Brazil emerged as a hegemonic economic power in the region with explicit plans to expand its capital investments to neighboring countries. Yet, in spite of this strong economic position, Shifter notes that "Brazil has no discernable agenda for regional governance."[27] China entered Pan-Amazonia with heavy investments, and is also contending for hegemonic status. Although some political analysts have classified this new situation as "post-hegemonic regionalism," within Hispanic America there is concern about Brazil and China forming a type of "regional imperialism"[28] in which their national capital orients the direction of Amazonian development towards meeting their national needs and not those of the places receiving these investments.

In this new financial landscape, the issue of social and environmental safeguards takes on renewed urgency. Thirty years of pressure on international financial institutions from civil society organizations have led to their adoption of a series of operational directives concerning indigenous peoples, the relocation of displaced populations and environmental safeguards, which have become the implicit international standard for global investments in development. By using bi-national agreements as the framework for their investments, China and Brazil have argued that these international norms do not apply to them and have actively use their growing clout within the World Bank to weaken them.

A different dimension of Brazil and China's new economic power is seen in the increasingly strong trade and investment relationship between them. In 2010, China passed the United States as Brazil's largest trading partner. In 2013, the central banks of China and Brazil established a bi-national agreement to use their national currencies for up to US$ 30 billion annually in trade for the coming three years, allowing them to circumvent the U.S. dollar as their primary trade currency.

To better understand the nature of these changes, a brief analysis of the Brazilian and Chinese cases, along with their respective investments, is necessary.

3.2. BRAZIL

3.2.1. Brazil's new economic development strategy

Over the past decade, Brazil's economy has participated in the global commodity boom that has increased its export of soya, beef, minerals and ethanol. Since much of this recent production, notably soya, is destined for East Asian markets, with China in first place, Brazil's planners have expressed interest in establishing land transport routes from the Brazilian Amazon to the Pacific ports of Andean countries.

Another pillar of Brazil's development strategy is the rapid development of the recently discovered deposits of petroleum under the dense plate of salt (known in Brazil as "pré-sal") at the bottom of the ocean of country's southeastern Atlantic coast. With production from these off-shore wells planned for the coming decade, Brazil is geared to become one of the world's top ten producers and exporters of oil.

The construction of mega-development projects serves as the principal axis of Brazil's new economic development strategy. A key plank of this strategy is to provide direct financial support for Brazilian national companies, with large construction firms and extractive industries having top priority. Over the past fifteen years, this has been achieved through the granting of large government contracts to these firms for the construction of infrastructure and extractive works.

The first Program for Accelerated Growth (PAC I, 2007-2010) was launched at the beginning of the second term of the Lula administration, with Dilma Rousseff, the current

27 Shifter, Michael. (2012). "The shifting landscape of Latin American regionalism." Current History, vol. 111, no. 742, p. 59.
28 Riggirozzi, Pía and Diane Tussie, eds. (2012). The rise of post-hegemonic regionalism: The case of Latin America. United Nations University Series on Regionalism, vol. 4.

president and then Minister of Mines and Energy, as the political mentor of the program, with total investments of R$ 657 billion[29] (US$ 313 billion). The second Program for Accelerated Growth (PAC II, 2011-2014), launched by President Rousseff, has total investments projected at R$ 955 billion (US$ 455 billion) and is one of her administration's highest priorities.[30] PAC II is focused on preparing for two sports mega-events – the World Soccer Cup in 2014 and the Olympic Games in 2016 – both of which require the construction or renovation of large infrastructure projects located in different parts of the country and which served as flashpoints of opposition in the national street demonstrations which swept Brazil in mid-2013.

This policy has more recently expanded its scope to include the financing of international infrastructure and extractive projects along with the conditionality that Brazilian firms receive the construction contracts. Amongst the most favored companies of this internationalization policy are Odebrecht, Camargo Correa, Andrade Gutierrez and Queiroz Galvão (construction), Petrobrás (petroleum) and Vale (mining). In both national and international contracts, this policy involves massive transfers of public monies to the private sector. In addition, the weight of the interest payments on the loans for these mega-projects is rarely borne by the private companies, but rather by the national governments that sign for the loans.

A second plank of this new development strategy involves the use of cheap labor. Many of the mega-development projects in Amazonia are being constructed in remote places where there is not a ready supply of labor. Thus, these large works rely on migrants who move into the region as temporary workers. The companies create an enclave in which it controls major parts of the worker's lives – housing, food, transportation, etc. – and places them in a situation of dependence on the company. This displaced workforce does not have at its disposal a local social network to rely on since they have left their families who live in other parts of the country. Many of the workers are not represented by a labor union, which further limits their ability to pressure the private company for better working conditions.

3.2.2. The Brazilian National Economic and Social Development Bank (BNDES)

The Brazilian National Economic and Social Development Bank (BNDES) was founded in 1952 during the administration of Getúlio Vargas as part of a strong governmental program for industrialization of the country in the Post-WWII era. The following year, petroleum in Brazil was nationalized and the state firm Petrobrás was created as the official company for national hydrocarbon development. BNDES is a public bank with a private legal status and maintains internal control over its capital investments. It operates according to its own statutes and administrative mechanisms, which are nominally under the supervision of the Ministry of Development, Industry and Trade. As a public entity, BNDES has the obligation to act on behalf of the public interest and its operations are reviewed by the federal accounting agency, the Tribunal de Contas da União (TCU).

Since its founding, BNDES has been one of the main financers of large-scale development projects in the country and has maintained its operations through military dictatorships and democratically governments of both left and right ideological leanings. Starting in the early twenty-first century, BNDES witnessed dramatic growth in its investment portfolio, with an average annual growth rate of 19%. Table #5 shows the speed of this increase. The financial assets of the bank at the end of 2010 were R$ 549 billion (US$ 275 billion), more that the assets of World Bank, the Inter-American Development Bank and the Andean Development Corporation combined.

29 R$ = Brazilian reals
30 Verdum, Ricardo. (2012). "As obras de infraestrutura do PAC e os povos indígenas na Amazônia brasileira." Brasilia: INESC, p. 6.

Table 5

Value of Annual Disbursements of BNDES

Year	Value (in billions of Brazilian reais)	Percentage change in value (from 2003 value)
2003	35,1	--
2004	40,0	+ 13,9%
2005	47,1	+ 34,2%
2006	52,3	+ 49,0%
2007	64,9	+ 84,9%
2008	92,2	+ 162,7%
2009	137,4	+ 291,5%
2010	168,4	+ 379,8%
2011	139,7	+ 298,0%
2012	156,0	+ 344,4%

Source: website of BNDES

On average, 75% of BNDES' disbursements in the past decade went to companies classified as "medium-large" (i.e. annual operating budget over R$ 90 million) and "large" (annual operating budget over R$ 300 million), with the remaining 25% being split up by "micro," "small" and "medium" size companies. During this same period, an average of 46% of disbursements was directed to industry, 35% to infrastructure and the remaining 19% divided almost equally by the agricultural sector and the commercial/service sector.[31] This internal correlation shifted in 2011 with the announcement that, over the next four years, BNDES will dedicate as much as 60% of its investments in infrastructure, with electricity generation and preparations for the two world sporting events leading the list.

A direct consequence of this new lending and investment policy can be seen in the 30-year, R$ 22.5 billion loan to the Norte Energía S.A. consortium for the construction of the Belo Monte Dam on the Xingu River. This was the largest loan in the history of the bank and was more than double its second largest loan ever (R$9.9 billion) to the Abreu and Lima petroleum refinery in state of Pernambuco. Prior to this, BNDES had given large loans to two other hydroelectric mega-dams – Santo Antonio (R$6.1 billion) and Jirau (R$9.5 billion) – and to the Angra III nuclear power plant (R$6.1 billion). Together, these five energy projects received over R$ 54 billion in the span of just four years.

Another change in the operations of BNDES during the past decade has been the increasing internationalization of its disbursements, once again with priority given to infrastructure projects. Investments in South American countries lead this process and include financing (current or proposed) in: Argentina (hydroelectricity, gas pipeline, mining); Bolivia (highways); Chile (subway); Colombia (urban transport); Ecuador (hydroelectricity); Guyana (highway, port, hydroelectricity); Paraguay (transmission lines); Peru (highways, hydroelectricity); Suriname (port); Uruguay (thermoelectricity; gas pipeline); and Venezuela (subway, hydroelectricity, steel industry). A different region of expansion of investments for BNDES is Africa, where the bank has expressed interest in hydrocarbon development in Nigeria, Angola and Algeria and the promotion of biofuels in several parts of the continent. Brazil is the Latin American country with the highest volume of investments in Africa and currently maintains trade relations valuing US$ 25 billion.[32]

This data reveals that BNDES is the engine behind Brazil's new development strategy outlined above. Several of the problems raised by civil society organizations and legal defense entities such as the Public Ministry (which operates at both the federal and state levels in Brazil) is the lack of adequate social and environmental safeguards for these multiple investments, the lack of transparency in their decision-making processes and the lack of information readily available to the public. The passage of the Law for

31 This information is from the website of BNDES: www.bndes.gov.br

32 WRI – World Resources Institute. (2012). "Brazil takes off ... and BNDES takes over: Promoting environmental and social sustainability in foreign investments." PowerPoint presentation. Washington: WRI.

Transparency and Access to Information by the Brazilian Congress in May of 2012 may help address some of these problems, though this law does not apply to international loans given out by the bank. BNDES established an internal Policy of Social and Environmental Responsibility in November of 2010 which reaffirms its commitment to the sustainable development of the country.[33]

BNDES administers the Amazon Fund which arose from an offer by the Norwegian government to donate up to US$ 1 billion to Brazil to finance actions that would contain deforestation, with this money to be parceled out in separate disbursements upon confirmation of a reduction in the rates of deforestation. The Amazon Fund was officially created in 2008 (Federal Decree 6527/2008) and has as its stated goals: reduction in the rate of deforestation; conservation and sustainable use of Amazonian forests; and investments in new monitoring technologies. At the close of 2012, BNDES had approved a total of 36 projects with a total value of R$ 439.8 million, divided among the following categories: sustainable production (R$ 134.7); institutional development of environmental agencies (R$ 154.6); environmental and land tenure registries (R$ 45.8); and scientific and technological development (R$ 104.8). In June of 2012, Norway distributed its second disbursement of US$ 178 million, making a total of US$ 650 that has been transferred so far.

One of the distinctive features of the Amazon Fund within BNDES is that is has a Guidance Committee (Comité Orientador do Fundo Amazônia – COFA) formed by representatives from the government, the business sector and civil society organizations. In spite of this innovation, COFA has not functioned very well during the roll out of the Amazon Fund, a process that is well documented in the Website "De Olho no Fundo Amazônia" (http://deolhonofundoamazonia.ning.com). The Fund has been criticized for its lack of transparency in the evaluation of projects and a general paucity in its dissemination of information. Although the Amazon Fund is authorized to give out up to 20% of its financial resources to non-Brazilian organizations, so far not a single organization outside of Brazil has benefitted from this clause. A list of all projects approved by the Fund can be found at www.fundoamazonia.gov.br.

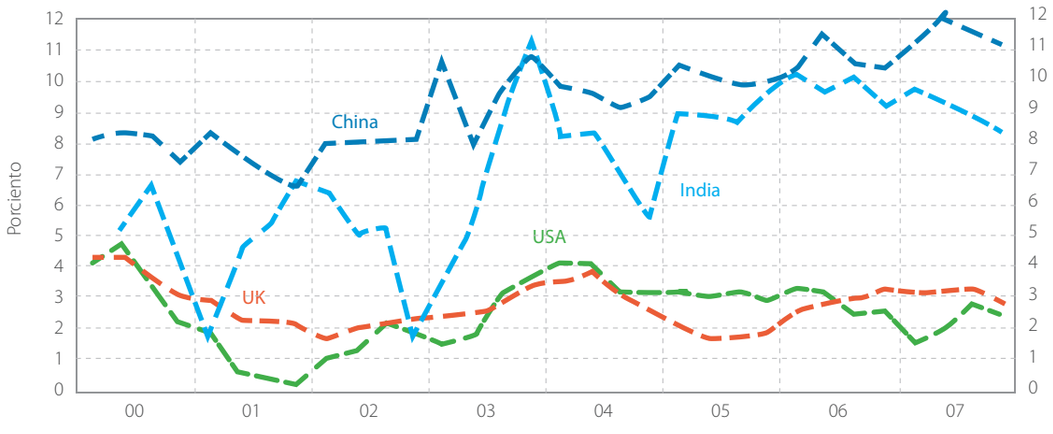
3.3. CHINA

3.3.1. China's new economic development strategy

The consistently high rates of growth of the Chinese economy since the 1990s, reaching as high as 11% before the global financial crisis, has turned it into a major player in the world economic and financial scene. In Figure #4 the disparity between the rates of growth of Great Britain and the United States and that of China and India before the financial crisis is evident.

Figure 4

Pre-crisis Growth Rates for the U.S., Great Britain, China and India - 1999-2008



Fuente: Reuters EcoWin

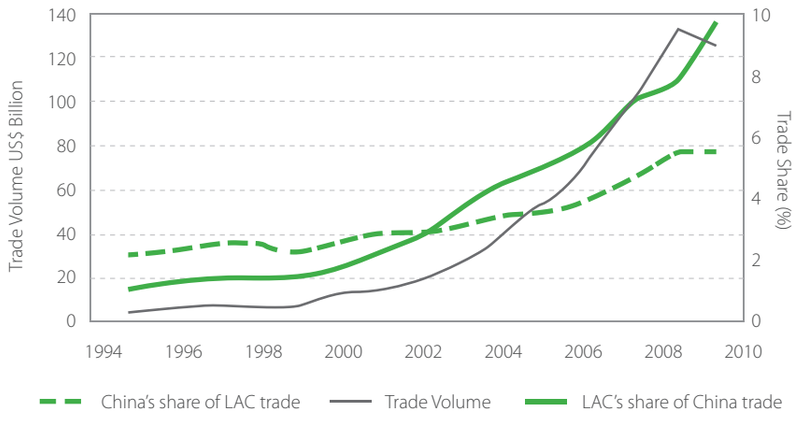
33 Widmer, Roland. (2012). "The Brazilian Safeguard Regime, its application, and recommendations for the future". One Advisory.

China's strategy for economic development shares many traits with that of Brazil. First, it has a policy for the internationalization of Chinese companies as part of a directive, launched in 2001 at the beginning of its tenth Five-Year Plan (2001-2005), to globalize their operations in an effort to gain access to natural resources, to stimulate exports and increase income. The Chinese government assists these companies by providing low-interest loans and diplomatic support, paying for their insurance and reducing their tax payments.[34]

After nearly twenty years of growing foreign investments in all of the world's continents, China has become a key player in the global economic development scene. Trade between China and Latin American and the Caribbean has grown consistently over the past fifteen years as shown in Figure #5. This growth has not been fully reciprocal, as the percentage of trade that China occupies in Latin American and Caribbean economies (10%) is nearly double (5.5%) of the percentage that these countries have with China.

Figure 5

Trade between China and Latin American and Caribbean Countries - 1995-2010



Source: IDB/INT & COMTRADE - [LAC = Latin American and Caribbean countries]

The increasing trade with China has been accompanied by an equally sharp rise in Chinese investments throughout the world. In Table #6 the financial investments of China in Amazonian countries is juxtaposed with the investments of these same countries in China. The final line item shows that Chinese investments in Latin American and Caribbean countries are nearly three times the amount of investments from these countries in China.

Table 6

Flow and Amount of Capital Investments between China and Amazonian Countries - 2006-2010 (in millions of US$)

Brazil to China	234.83	607,92	China to Brazil
Venezuela to China	10.45	228,34	China to Venezuela
Peru to China	8.73	191,47	China to Peru
Bolivia to China	11.65	46,01	China to Bolivia
Ecuador to China	3.85	14,58	China to Ecuador
Colombia to China	0.64	12,23	China to Colombia
Latin America/Caribbean to China	**584.00**	**1.440,23**	China to Latin America/ Caribbean

Source: Inter-American Development Bank

34 WRI - World Resources Institute. (2012). "Emerging actors in development finance: A closer look at China's overseas investment." PowerPoint presentation. Washington: WRI.

3.3.2. Chinese banks

The two main Chinese banks responsible for the financing of mega-development projects in Latin America are the China Eximbank and the Chinese Development Bank. The China Eximbank was created in 1994 at the beginning of the period of rapid expansion of Chinese investments throughout the world. This bank, which is controlled by the Chinese State Council, is the principal credit agency of the Chinese government for the financing of projects in foreign countries and has become the world's largest source of credit for export activities, giving out loans of more than US$ 70 billion in 2009.[35] In March of 2013, the Inter-American Development Bank announced that China would contribute US$ 2 billion to the Chinese Co-financing Fund for Latin America and the Caribbean which would provide supplemental financing for IABD development projects in the public and private sectors.[36]

The Chinese Development Bank finances national and international projects that are aligned with its official development goals, particularly in the areas of energy development and natural resource extraction. This bank was a key financer of the controversial Three Gorges Dam in China, now the world's largest dam. Out of a total worth of US$ 810 billion, it dedicates 84% of its investments to national development, with the rest going to international investments. In 2011, it made US$ 74.6 billion in direct investments in other countries.

In many cases, Chinese loan packages contain several types of financing. A Chinese US$ 2 billion loan to Ecuador, for example, for the construction of four hydroelectric dams by Chinese firms, contains an agreement for Ecuador to pay US$ 680 million of this amount in future sales of oil to China. In an agreement of this sort, several types of economic relations are present: financial loans; future guarantees of the sale of oil; expansion of Chinese companies into the international development field; and bi-lateral aid.[37]

In addition to these politically-oriented banks, which function under the direct command of the Chinese government, there are a host of commercial banks dedicated to financing companies: the Bank of China; the Construction Bank; the Agricultural Bank and the Bank for Industry and Commerce. Much of the internal government information about the activities of these banks is not available to the public, making it hard to distinguish between financing that is bi-lateral aid and that which is interest-bearing credit.

4. SOCIOENVIRONMENTAL IMPACTS OF MEGA-DEVELOPMENT PROJECTS

4.1. Socioenvironmental impacts at a pan-Amazonian scale

The geopolitical analysis of capital investments in mega-development projects in Amazonia and of the neodevelopmentalist ideology that fuels them now needs to be joined by an analysis of the socioenvironmental impacts these projects produce. The current wave of frontier expansion in Amazonia, as described above, differs from previous waves due to its continental-wide range involving all eight of the Amazonian nations in unprecedented ways.

An ecological perpective will be used to identify and measure these impacts. All types of human interventions, irregardless of their size or origin, will be analyzed in terms of adaptation to the Amazon biome and its multiple ecosystems. From this perspective, mega-development projects are a specific mode of adaptation with high levels of environmental destruction. Scientists from many disciplines are indicating that the magnitude of environmental impacts on the tropical forest by these mega-projects is of such intensity and scope that the ecological dynamics of the Amazon watershed are being disrupted and pose a threat to it as a functioning ecological system. Amazonian indigenous peoples and local Amazonian communities are the social groups who bear the greatest negative impact of these projects, even though they have little say in the neodevelopmentalist push for economic growth. Environmentalists, for their part, have taken up the banner of conservation and are pushing for new forms of low-impact, sustainable development.

35 *Ibid*.
36 La República. (2013). "China aportará US$ 2.000 millones a fondo del BID para América Latina". Lima, March 17th.
37 International Rivers. (2012). The new great walls: A guide to China's overseas dam industry (second edition). Berkeley, CA: International Rivers.

The Amazon watershed in its entirety[38] is the unit of analysis for evaluating socioenvironmental impacts and, given its large scale, this study can only offer broad generalizations. The seven pan-Amazonian socioenvironmental impacts identified below have been derived from the use of disciplinary perspectives from the ecological and social sciences: human ecology; human geography; biology; hydrology; climatology; anthropology; and sociology.

4.1.1. Human Ecology: The forced industrialization of the jungle

The modes of adaptation developed and modified by indigenous peoples and a host of other traditional communities over past centuries have been extensively documented by ecological anthropology and archeology.[39] Each social group uses a unique mix of interrelated productive activities that includes, in varying degress, itinerant agriculture, hunting, fishing and gathering. Though these lifeways have often been romanticized as being in "harmony with nature," over the centuries indigenous peoples have produced many impacts on the Amazonian biome, some with long-lasting consequences. Balée estimates that 12% of the forest cover of the Amazon at the time of the European invasions was made up of anthropogenic forests.[40] Recent studies indicate that the adaptive practices of indigenous peoples were responsible for the creation of "terras pretas do índio", areas of fertile soil that are apt for agriculture. Other researchers postulate the existence of a direct relationship between high rates of biodiversity and indigenous adaptive practices.[41]

These many impacts do not alter the fact that they did not require massive cutting of the forest and used the standing forest as a key resource. Each distinct ecosystem where these peoples lived offered limitations such as low soil fertility and areas where game and fish were sparce, yet these were coped with through the relocation of their villages which allowed time for the impacted area to regenerate and repopulate. Sponsel answers critics who claim that indigenous peoples can be just as destructive to the forest as settlers or other development actors that move into the forest with the weight of the historical record: indigenous peoples have lived in the Amazon jungle for millennia in a sustainable manner that did not threaten the biome with ecological collapse.[42]

Mega-infrastructure and extractive projects constitute a new mode of human adaptation to Amazonia: industrialization. Historically, processes of industrialization of a region lasted decades – e.g. the industrialization of England – and produce changes that successive generations adjust to in gradual and unique ways. Mega-projects are rapidly industrializing the jungle and transforming rural areas into regional urban centers in the space of just a few years. Mega-development projects can require high levels of energy usage, depend upon thousands of workers to build them, receive large financial and capital investments and transform the forests and the rivers where they are built in major ways.

This push towards industrialization is occurring at several different levels of environmental functioning. Amazonia is witnessing the industrialization of: (i) water flows, through their transformation into electricity transmitted to large urban centers; (ii) underground resources, with the extraction of oil, gas and minerals; (iii) soils, via monocultures of soya, sugar cane and oil palm; and (iv) forests, through the establishment of eucalyptus and pine tree plantations to supply cellulose plants. This new mode of adaptation is being imposed upon Amazonian peoples without their full knowledge or consent. Indigenous peoples, even when they are consulted about specific projects, are not clearly told of the long-term consequences of the industrialization of their forests, which may result in the destruction of their livelihoods.

38 The Amazonía Bajo Presión Atlas (RAISG, 2012) describes three ways to delimit Amazonia: as a watershed; as a biome; and as an administrative area. In this study, the watershed delimitation is used.

39 For an introduction to this literature the reader can consult the following classic works: Meggers (1971); Hames and Vickers (1983); Posey and Balée (1990); Redford and Padoch (1992); Roosevelt (1994); and Sponsel (1995).

40 Balée, William. (1992). "People of the fallow: A historical ecology of foraging in lowland South America". In: Conservation of neotropical forests, Redford, K. and C. Padoch, eds. New York: Columbia University Press, p. 35-57.

41 Bensusan, Nurit and André Lima. (2003). Quem Cala Consente? Subsídios para a proteção aos conhecimentos tradicionail (Documentos ISA nº 8). São Paulo: Instituto Socioambiental.

42 Sponsel, Leslie E. (1995). "Relationships among the world system, indigenous peoples, and ecological anthropology in the endangered Amazon". En: Indigenous Peoples and the Future of Amazonia, L.E. Sponsel, ed., pp. 264-293. Tucson: University of Arizona Press.

4.1.2. Human Geography: The territorial restructuring of Amazonia

The industrialization of Amazonia is provoking a major restructuring of its demographic and territorial dynamics. The most salient impact is the urbanization of the forest. With the rapid growth of Amazonian cities as a result of the installation of mega-projects and other industrial endeavors, the socioeconomic and ethnic composition of the population changes and increases in density. The immigration into the region by people from other parts of the country has transformed electoral politics as politicians vie for votes among the new migrants who have few ties to or interest in the forest and introduce a decidedly urban agenda into Amazonian politics. This leaves the claims of indigenous peoples for the protection of their territories in a minority, and unfavorable, position amongst most Amazonian lawmakers.

A corollary of urbanization is the reorganization of transportation modes in favor land transport. Most traditional economies were, until recently, organized around rivers as waterways provided their primary means of transport and commerce and structured sociability and kinship ties between communities. The principal mechanism of transport and commerce of an urbanized economy is through roads, highways, railways and pipelines, such that fluvial connectivity is greatly reduced in importance with often serious consequences to traditional group dynamics. Roads and highways have the additional impact of facilitating the colonization and deforestation of lands by agricultural settlers who, once settled, demand the construction of ever more roads. This increased settlement inhibits the millenary practice of mobility by indigenous peoples, forcing them to delimit fixed territories as their homelands.

4.1.3. Biology: Genetic erosion

Accelerated rates of deforestation of Amazonia have contributed to the extinction of many endemic plant and animal species, with a consequent reduction in biological diversity, the product of millions of years of biological evolution. The high rates of biodiversity loss, not only in Amazonia but throughout the world, have led some scientists to postulate that humans are provoking a sixth epoch of mass extinctions, the last being 65 million years ago with the extinction of the dinosaurs, and the first to be caused by human actions.[43] Today, biodiverse forests are giving way to large monoculture tracts of land or to immense ranches for grazing cattle with production destined for faraway markets. Forests that are not destroyed can also be degraded though the loss of habitats and wildlife and the poisoning of soils and waters.

From the perspective of the scientific community, this wave of extinctions is destroying humanity's genetic and biological heritage before science is able to study it, summoning the analogy of burning down a library before reading most its books. We do not know what levels of biological diversity are most appropriate for fomenting biological evolution, but genetic erosion poses the danger of limiting our future adaptive abilities by have an impoverished range of genetic and biological material at our disposal.

4.1.4. Hydrology: The end of free-flowing rivers

One of the most dramatic impacts of large-scale dams in the Amazon stems from the major disruptions in the unique hydrological and biological characteristics of large, free-flowing, tropical forest rivers. The blockage of long-distance fish migrations and the destruction of spawning habitats by dams could produce major biodiversity loss, as well as harm riverine fishing communities that depend upon the river for their sustenance. Pioneering investigations by a team of scientists led by Michael Goulding indicate that the construction of a series of hydroelectric dams in the headwaters region of the Amazon basin would disrupt of flooding cycles and sediment deposits and could cause a the drying up, either temporarily or permanently, large areas of flooded forests. This could cause the death of the forest, not through deforestation, but rather through dehydration.[44]

For the many Amazonian peoples who maintain sustainable, low-impact adaptive practices – indigenous peoples,

43 Morell, Virginia. (1999). "The sixth extinction." National Geographic 195(2): 42-59.}
44 Goulding, Michael et al. (2010). La Cuenca del río Inambari: Ambientes acuáticos, biodiversidad y represas. Lima: WCS.

fishing communities, rubber tappers and others – rivers are essential to their very existence as a people or community. The most directly impacted communities are those forcibly relocated to other lands due to the flooding of their homes and fertile floodplains by reservoirs. By interrupting the use of the river as a transportation waterway, dams also sever social ties between families and communities located along the rivers.

In sum, the construction of many large-scale dams in the vast headwaters region of the Amazon Basin – encompassing parts of Bolivia, Peru, Ecuador and Colombia – will produce critical changes in continental water flows, with little knowledge of the ecological consequences of this policy. This new wave of dam building in the headwaters of the Basin is a "hydrological experiment" of continental proportions, yet little is known scientifically of pan-Amazonian hydrological dynamics, creating the risk of provoking irreversible changes in rivers.

One of the arguments used to promote the construction of dams is that hydroelectricity is a "clean" (low-carbon) and renewable source of energy, particularly when compared with thermoelectric plants that run on fossil fuels. A hydroelectric dam can even generate carbon credits if it is classified as a Clean Development Mechanism. This vision has been sharply criticized by Fearnside y Millikan, who identify different types of impact: downriver impacts, such as drying out of portions of the river, reduction in fisheries and interruption of seasonal floods which fertilize the floodplain; upriver impacts, such as flooding, disruption of fish migrations and sediment flows; and reservoir impacts, such as changes to water quality, and an increase in the release of climate-damaging methane gases.[45]

4.1.5. Climatology: Potential for ecosystem collapse

Biophysical impacts are not limited to forest destruction and the disruption of river flows. While the water that runs in rivers is the most well-known of hydrological flows, Amazonia also has large underground and aerial aquatic flows. Investigators at the National Observatory of Brazil recently uncovered evidence of the existence of a 6,000 kilometer-long underground river that flows below the Amazon River. There are also strong east-to-west atmospheric flows of humidity and vapor which, when they butt up against the tall Andes Mountains, are redirected towards the south where they benefit the agricultural lands of Brazil, Bolivia and Argentina.[46]

Another ecological concern over high rates of deforestation and land use change are the greenhouse gases which are released into the atmosphere. Carbon dioxide is the most important of these gases but methane (from cattle production and large reservoirs) and soot (from the production of charcoal) are other worrying sources of the greenhouse effect. General estimates put the percentage of greenhouses gases that originate from the destruction and degradation of tropical forests at between 15 to 20%.

When ongoing deforestation is combined with the environmental events related to global climate change, scientists are fearful that the Amazon tropical forest may soon reach a tipping point that could lead to ecosystem collapse. An approximation of this tipping point places it at 70% of the original forest cover.[47] With 18% of this cover already destroyed, if current deforestation rates continue, the 30% deforestation threshold will be reached within the coming two decades. The increase in the number of extreme environmental events – e.g. major draughts in 2005 and 2010; major flooding in 2009 – is an indication that major changes are already upon us. Recent studies of the phenomena known as "Amazon dieback" – first identified by Brazilian climatologist Carlos Nobre in the early 1990s – warn of the potential for a significant decline in biomass (carbon) of the tropical forest and its subsequent transition to savannah.[48]

4.1.6. Anthropology: Territorial invasions

From the moment Europeans arrived in Amazonia and began to explore, plunder and settle it, the invasion of indigenous peoples' territories has been an integral part of frontier expansion. Disease, war and enslavement all took heavy tolls on autonomous indigenous societies

45 Fearnside, Philip and Brent Millikan. (2012). "Hidrelétricas na Amazônia: Fone de energia limpa?". En: O setor elétrico brasileiro e a sustentabilidad no século 21, 2ª edição. Brasilia: International Rivers Network – Brazil.
46 Moss, Margi and Gerard Moss. (2012). "Rios Voadores". Projeto Rios Voadores. [www.riosvoadores.com.br].
47 Calculation that uses as its baseline the forest cover in Amazonia at the time of the first arrival of Europeans at the beginning of the sixteenth century.
48 The World Bank conducted an extensive study of this topic. The results are available in: Vergara, Walter and Sebastian M. Scholtz. (2010). Assessment of the Risk of Amazon Dieback. Washington: World Bank Studies.

which brought about the extinction of many societies and the decimation of others. These incursions provoked a multiplicity of migrations by indigenous peoples – intensifying and altering prior pre-Cabralian migrations[49] – and redesigned the ethnic map of the entire region. This process of the destruction of the lifeways and cultures of indigenous peoples – known in the anthropological literature as ethnocide – continues today.

After the first wave of developmentalist frontiers arrived during the last half of the twentieth century, the possibilities for indigenous peoples to migrate to other forested lands had been drastically reduced due to the land occupations by these new social groups: there simply was nowhere left to flee. From an indigenous territorial perspective, this new situation represented a significant change, since indigenous societies would now be enclosed in fixed territories, thereby eliminating their ability to move about freely throughout the forest. This process is now reaching its end with the encirclement of the last indigenous societies living in situations of voluntary isolation.

The high rates of deforestation in Amazonia have compromised the main source of sustenance of indigenous peoples and other traditional communities. Their agro-forestry systems, for example, depend upon biologically diverse ecosystems, while the degradation and contamination of the forest has contributed to shortages of fishing, hunting and gathering resources. In the face of these multiple threats, one of the main challenges for indigenous peoples has been to gain official recognition of the traditional territories (now in their geographically fixed modality) from their respective national governments and the formal demarcation of these territories, along with enforceable mechanisms that guarantee their protection from invaders and other forces of environmental degradation. Once the integrity of their territories is secure, the next step in their struggle is to make sure that their territories are economically, demographically and environmentally sustainable and are able to operate successfully within the context of the frontier dynamics of global capitalist expansion.

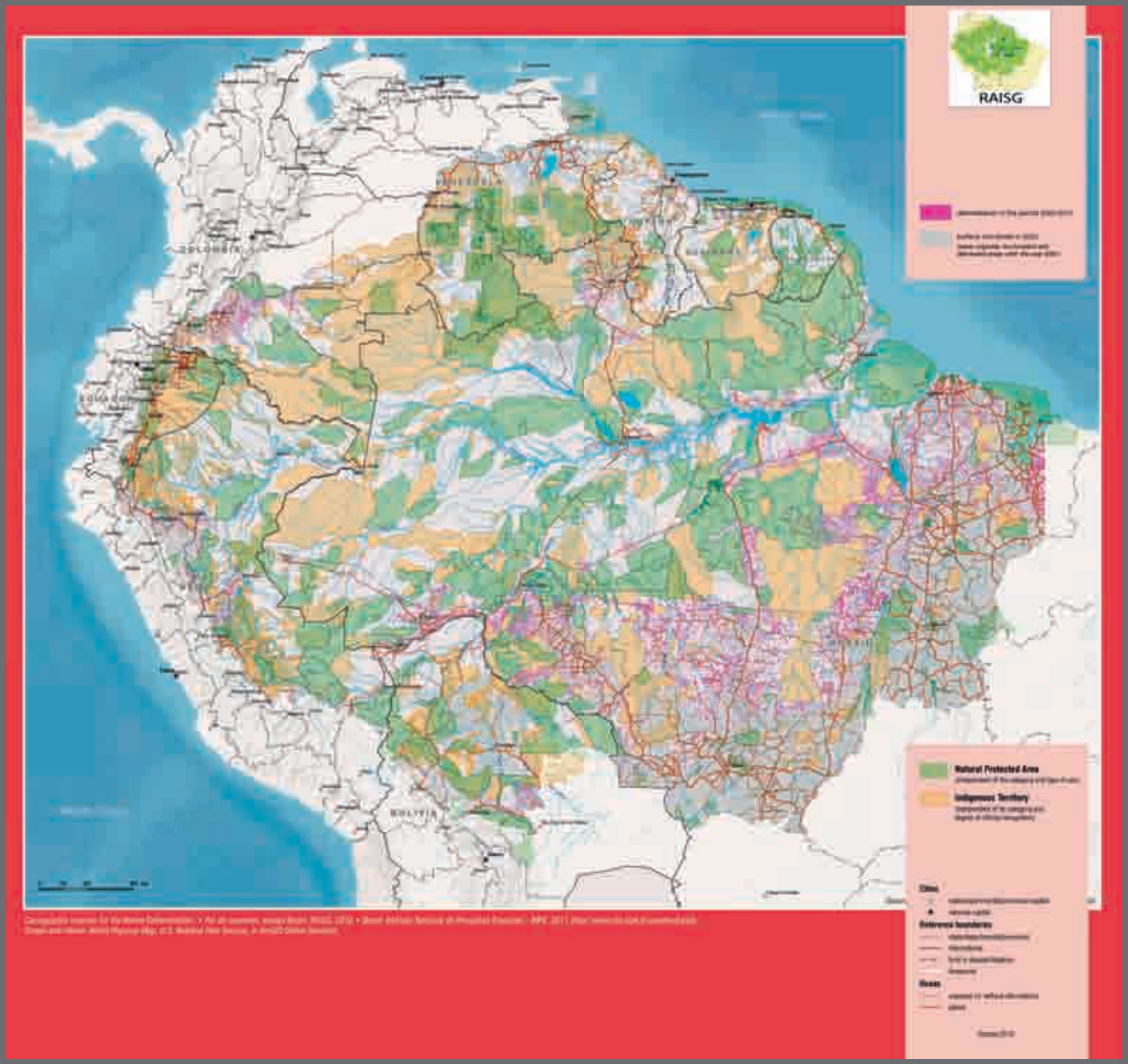
4.1.7. Sociology: Economic and social marginalization

The rapid urbanization of Amazonia has created ballooning cities in which in migration has outstripped municipal governments' capacity to meet the housing, sanitary, educational and employment of these new residents. This growth process has been conceptualized by Browder and Godfrey as one of "disarticulated urbanization."[50] Brazil is a leader of this phenomenon, as the following data indicate: between 2000 and 2010, ten cities in the Brazilian Amazon doubled in population, while Manaus, the largest city in the entire Amazon Basin, grew by 23% to reach a population of 1.7 million inhabitants. Large-scale development projects from distinct economic sectors have produced rapid growth of cities both during and after their installation; e.g. Porto Velho and Altamira (hydroelectricity); Parauapebas (mining); Sinop (agribusiness); and Paragominas (timber).[51]

With the installation of a mega-development project, the consortium or company responsible for its construction and operation often builds dormitories to house its temporary labor force. However, the influx of people is invariably greater than the housing and jobs available and the residual population is obliged to relocate themselves on the outskirts of nearby cities. In the process, these cities' existing limits on public services such as sanitation, health care, electric grids and schools become even more acute. The lack of political control leads to a surge in illicit activities and violence, resulting in the economic and social marginalization of large segments of the urban population.

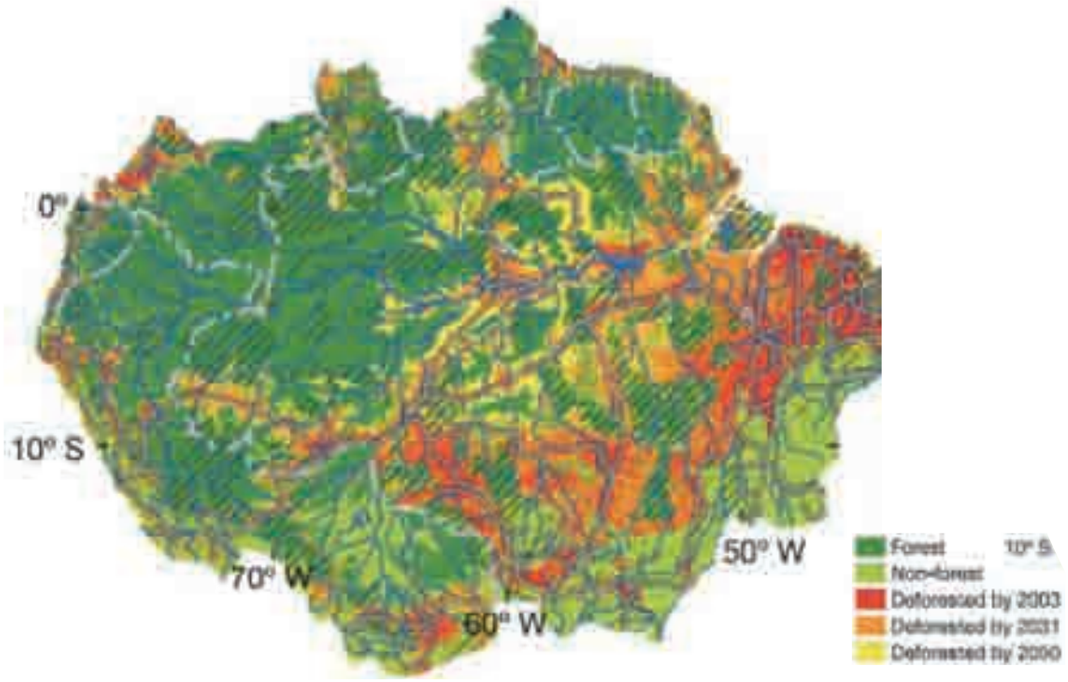
49 For an excellent analysis of the Arawak diáspora during the past millenium, see: Heckenberger, Michael J. (2005). The ecology of power: Culture, place, and personhood in the southern Amazon, A.D. 1000-2000. New York and London: Routledge.
50 Browder, John and Brain J. Godfrey. (1997). Rainforest cities: urbanization, development, and globalization. New York: Columbia University Press.
51 Romero, Simon. (2012). "Swelling rain forest cities surge in Amazon". New York Times, November 24th.

Map 6: Deforestation in Amazonia



Fuente: RAISG

Map 7: SimAmazonia 2006 – Simulations of Future Deforestation



Source: Instituto de Pesquisa Ambiental da Amazônia (IPAM)

4.2. Measuring and projecting impacts at a pan-Amazonian scale

The earliest computerized models that simulated different rates of deforestation in future scenarios were essential to building a truly pan-Amazonian vision of the loss of tropical forests. The Instituto de Pesquisa Ambiental da Amazônia (IPAM) was in the vanguard of this process when it made cartographic projections of the sites and rates of future deforestation based upon a complex set of variables. The first iteration of this model, launched in 2006 (see Map #7), combined information about past and current deforestation with projections of future deforestation. In any such modelling, it is important that the variables used be refined and revised for each iteration. The projections of deforestation for the years 2031 and 2050, for example, are no longer valid given the speed with which changes are occurring in the region, particularly with regard to the construction of mega-infrastructure projects and the changing demand for commodities produced in Amazonia.

The proliferation of new geo-referencing technologies amongst civil society organizations in all of the Amazonian countries has generated a variety of monitoring systems of deforestation and environmental destruction. In many cases, the information contained in data bases of civil society organizations are more accurate and updated that official government data.

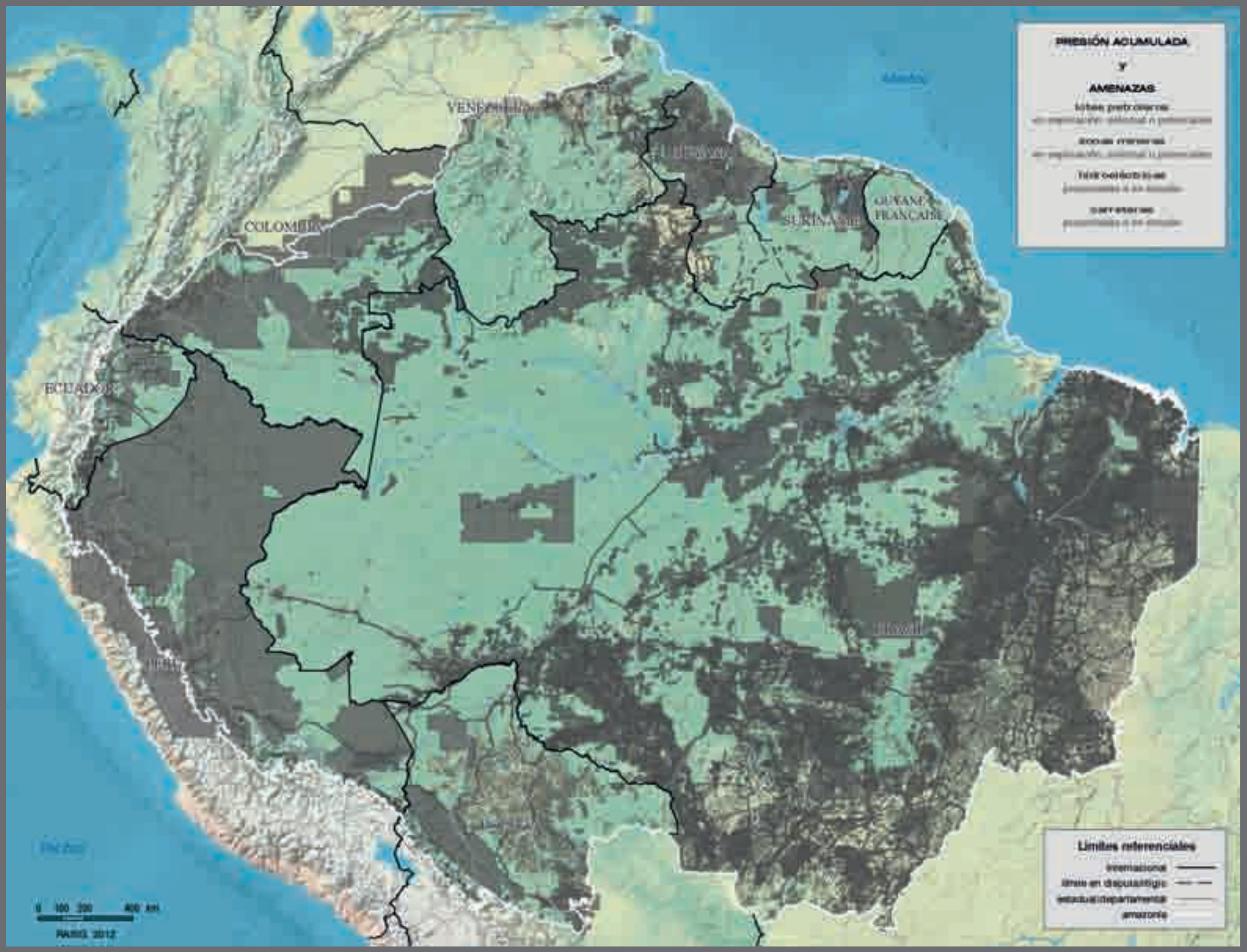
The cartographic work of the Instituto Socioambiental (ISA) in Brazil over the past thirty years (including the work of its antecedent organizations) has produced some of the best, and most accessible, data on protected areas and indigenous territories in Brazil, turning it into the standard source for this type of information.[52] The formation of the Amazon Network for Socioenvironmental Geo-referenced Information (RAISG) in 2007, which today comprises 11 organizations located in eight Amazonian countries, is a milestone both in regard to the coordination between civil society organizations and to the high technical quality of their work. The Atlas "Amazonía Bajo Presión", launched in December of 2012, presents maps (some of which have been generously ceded for use in this publication) and statistics on highways, oil and gas, mining, hydroelectric dams, sites of forest fires and deforestation and serves as a primer for work towards protecting the Amazon rainforest and defending its peoples.

52 The publication by ISA every five years of an encyclopedic report on the indigneous peoples of Brazil is an indispensable guide to any study of these goups. See: Ricardo, Beto and Fany Ricardo, eds. (2011) Povos Indígenas no Brasil: 2006-2010. São Paulo: Instituto Socioambiental.

Map 8: Amazonia: Accumulated pressures

Fuente RAISG

Map 9: Amazonia: Accumulated pressures and threats



Fuente RAISG

SECTION TWO 2

PAN-AMAZONIAN AGENDA FOR AN ALTERNATIVE MODEL OF DEVELOPMENT

1. AGENDAS FOR THE DEFENSE OF NATURE AND COLLECTIVE RIGHTS

The weight of the socioenvironmental impacts outlined above is distributed in a highly unequal manner. Those entities that benefit most from mega-development projects tend to be from outside the Amazon region and include the large multinational corporations that build and operate them, national governments that receive rent and royalty payments and financial institutions that earn interest payments or gain future guarantees of natural resources from their loans. These socioeconomic actors control the principal levers of political and economic power in Amazonia and justify their dominance through the neodevelopmentalist ideology that promises a higher standard of living for the general population.

The social groups that suffer the brunt of these impacts are indigenous peoples, who are experiencing the invasion and degradation of their territories, and local Amazonian communities that are faced with an increasing set of social, economic and health problems. For these groups, the status quo is not satisfactory and they are actively promoting policies for an alternative model of development that takes their needs into consideration. From a biophysical perspective, the Amazon rainforest is a net loser due to high rates of deforestation, reductions in biological diversity, contamination of soils and rivers, increases in environmental disasters and the gradual movement towards savannization.

The actions of distinct groups and organizations to modify the status quo and move it in directions that are more socially just and less damaging to the environment have transformed them into key sociopolitical actors, each with their respective agendas for change. Three such agendas will presented here for analysis: the environmental agenda, led by international conservationist organizations; the collective rights agenda, led by indigenous peoples; and the labor agenda, led by worker's unions. After a brief description of each of these agendas, the historical relations between them will be analyzed. This will be followed by a theory of change capable of guiding these disparate agendas towards the elaboration of proposals for alternative models of development for Amazonia.

1.1. The environmental agenda

Of the three agendas to be analyzed here, the environmental agenda is the best known. During the 1980s, the concept of "biodiversity" was coined to refer to the thousands of distinct species (and their genetic makeup) that a specific ecosystem contained.[53] Since tropical forests contain world record levels of biological diversity, of both flora and fauna, and Amazonia is the world's largest standing tropical forest, this region captured the attention of the international environmental movement, baptized it as being part of

53 Takas makes an interesting analysis of the cientific "invention" of biodiversity. Takas, David. (1996). The idea of biodiversity: Philosophies of paradise. Baltimore and London: John Hopkins University Press.

humanity's biological and genetic heritage and pinpointing it as a key site of its global struggle.[54] Around this same time, a group of activist scientists created the field of "conservation biology" which was designed to apply their knowledge of biological and evolutionary processes to the cause of conserving nature.[55]

The main environmental public policy used to promote the conservation of biodiversity is protected areas. In the decades of the 1980s and 1990s, large protected areas were created in most Amazonian countries, most of which were of the "strict protection" modality which did not allow for human habitation within them. Underlying this new push for the creation of protected areas was a political agenda geared toward the conservation of tropical forests that was led by environmental non-governmental organizations,[56] biologists of varied specializations, environmental agencies of national and state-level governments, philanthropic organizations and agencies of international cooperation from the European Union and the United States. This group formed what is classified here as the conservationist current of the environmental movement.[57] This current experienced a moment of apogee at the Earth Summit held in Rio de Janeiro in June of 1992, where the Convention of Biological Diversity was signed by over 100 countries. The Pilot Program for the Protection of Brazilian Tropical Forests (PPG-7), jointly financed by the Group of Seven Industrialized and the Brazilian government, was one of the most important policy efforts of the conservationist current.

A second document approved at the Earth Summit was the Convention on Climate Change whose principal objective is the stabilization of greenhouse gases in the hope of avoiding drastic, irreversible changes in global climate. The Kyoto Protocol, signed in 1997, established obligations for the industrialized countries to reduce their greenhouse gas emissions. In spite of intensification in global negotiations during the first decade of the twenty-first century, no other substantive agreement was made. By 2012, the only consensus reached was to extend the already weakened Kyoto Protocol with the promise by the negotiating parties to reach a new agreement by 2020.

The incorporation of tropical forests as part of global negotiations on climate change advanced their importance as sites of sequestered carbon. A program for the Reduction in Emissions from Deforestation and Forest Degradation – REDD (subsequently REDD+ with the inclusion of tropical land use change) was included in the global negotiations at the 13th Conference of Parties held in Bali, in 2007, but this initiative languished and six years after launching the idea, the implementation of a global system of credits based upon REDD+ principles does not appear to have a promising future.

Another current of action of the environmental agenda is concentrated on rivers and freshwater resources, with "watersheds" being its key organizing concept. The interconnectivity of Amazonian rivers, along with the interscalar dimension of watersheds, allows this environmentalist current to work at different scale of social analysis and political action. The Report of the World Commission on Dams, published in 2000 under the title Dams and development: A new framework for decision-making, was written by a panel of international experts after having conducted worldwide consultations. This report has since become a primary reference document for policy-makers and activists and presents a multiple vision of hydrologic and human development. The last of its seven strategic priorities summarizes this vision: "Sharing rivers for peace, development and security." The International Rivers organization takes up this challenge in its 2020 Plan for Amazonia which integrates three elements in its program for changing the way rivers are treated in the basin: recognizing the value of biodiversity (including ichthyofauna); protecting the collective rights of riverine communities; and sharing the ecosystems services that free-flowing rivers provide.[58]

1.2. The collective rights agenda of indigenous and traditional peoples

Over the past two centuries, Western nation-states have experienced a gradual, yet inexorable, expansion of the rights that their citizens enjoy. The introduction of the notion of civil rights in the late eighteenth century following the American and French revolutions opened a new public space for debate and the resolution of conflicts and led to an increase in the importance of civil society organizations. In the post-World War II era, human rights were fortified with the promulgation in 1948 of the Universal Declaration of Human Rights by the United Nations. The turbulent decade of the

54 Zhouri, Andréa. 2004. "Global-local Amazon politics: conflicting paradigms in the rainforest campaign". Theory, Culture & Society 21(2):69-89.
55 For a state of the art guide to this field, see Kareiva, Peter and Michelle Marvier. (2011). Conservation science: Balancing the needs of people and nature. Greenword Village, CO: Roberts and Company.
56 The largest of these are Worldwide Fund for Nature (WWF), Conservation Internacional (CI), The Nature Conservancy (TNC) and the Wildlife Conservation Society (WCS).
57 For a detailed analysis of the distinct currents of the environmental movement, see: Little, Paul E. (2004). "Ambientalismo e Amazônia: Encontros e desencontros." In: Amazônia: Cenas e cenários, D. Sayago, J-F. Tourrand; M. Bursztyn, eds., pp. 321-344. Brasilia: Editora UnB.
58 International Rivers. (2012). 2020 Plan for the Amazon: A long-range strategy for protecting rivers and rights in the Amazon, from the Andes to the Atlantic. Berkeley: International Rivers.

1960s placed environmental rights and the rights of women on the international political agenda, though with widely varying degrees of acceptance in different parts of the world.

In the decade of the 1980s, the rights of indigenous peoples gained force within the United Nations with the establishment of the Working Groups on Indigenous Populations. In 1989, the International Labor Organization approved its Convention 169 on Indigenous and Tribal Peoples in Independent Countries, thereby creating a new space for political action for the promotion and defense of indigenous peoples' rights.[59] Gradually, a political agenda promoting the protection of the collective and territorial rights of indigenous peoples emerged, comprised of a network of social movements, indigenous associations and federations, organizations promoting cultural survival,[60] associations of anthropologists and lawyers, labor organizations (such as the ILO) and environmental justice movements.

Indigenous peoples and their representative organizations have led this process and used the political space provided to non-national groups by the United Nations to promote their cultural and collective rights. The establishment of the Permanent Forum on Indigenous Peoples in 2000 by the United Nations was one such space and has given indigenous peoples from all continents an opportunity to share their experiences and develop common proposals through their biennial meetings. Then, in 2007, after twenty-five years of debate, the General Assembly of the United Nations approved the Declaration of the Rights of Indigenous People, giving new impulse to the struggle for the collective rights of indigenous peoples.[61]

Territorial rights figure among the most important and urgent of these collective rights, since the territory of each people is a central part of their cultural identity and serves as the main source of their livelihood. The construction of mega-development projects, and the massive migrations that they engender, are a primordial threat to the territorial integrity of indigenous peoples. Since the majority of decisions regarding the recognition and demarcation of indigenous territories take place within the framework of nation-states, it is at this level that the basic struggle of the protection of territorial rights occurs.

This long-term struggle has been strengthened in recent decades with the new wave of national constitutions that have been adopted throughout the region. The Brazilian Federal Constitution (1988) recognized, for the first time in its history, the ancestral rights of indigenous peoples over the lands that they traditionally occupy and guarantees Brazilian citizens the right to a healthy natural environment. The Political Constitution of Colombia (1991) guaranteed territorial rights of indigenous peoples and allowed them to be governed by councils organized according to their traditional customs and systems of justice. The most recent wave of constitutions has advanced even further in the protection of collective rights. The Ecuadorian Constitution (2008) granted the Right to Well-Being (Buen Vivir) and the Rights of Nature. The Political Constitution of Bolivia (2009) introduced the concept of a plurinational state, with a model of egalitarian legal pluralism, and recognizes the Right to Self-determination for indigenous peoples.

Another front of the struggle for collective rights refers to the commercial expropriation of traditional knowledge. With the emergence of new biotechnologies beginning in the 1980s,[62] the possibilities of genetic manipulation of previously unknown Amazonian biological material have markedly increased with bio-prospection activities. The vast reserve of traditional knowledge that indigenous peoples have developed over centuries offers lucrative "shortcuts" in the search for genetic material with high potential for human use in pharmaceuticals, foods and cosmetics. In this process, there is the risk of the privatization of this knowledge through patenting.

At an international level, indigenous peoples' organizations have worked on several fronts to protect their rights, including the Convention on Biological Diversity (articles 8(j) and 10(c)), the International Treaty of Plant Genetic Resources for Food and Agriculture (ITPGRFI) and the World Intellectual Property Organization (WIPO). The Nagoya Protocol for Access and Benefit Sharing, approved in 2010 during the 10th Conference of Parties of the CBD in Japan, represents a strong move toward the protection of these rights, though the arduous task of developing, implementing and enforcing regulations remains.

1.3. Synergies and tensions between the two agendas

The social actors that promote the environmental agenda have established extensive relations with indigenous peoples and other actors of the collective rights agenda that have fluctuated between political alliances and

59 ILO Convention 169 makes presents a major change in focus from that of ILO Convention 107 of 1957 which promoted an assimilationist project for indigenous peoples.

60 The most important of these are Cultural Survival, Survival International and the International Work Group for Indigenous Affairs (IWGIA).

61 RAMA – Red Jurídica Amazónica. (2012). *El derecho al territorio y al autogobierno territorial de los pueblos indígenas de la región Amazónica de Bolivia, Colombia, Ecuador Perú y Venezuela*. Quito: Fundación Pachamama.

62 For a review of this moment in the development of the biotechnology industry and its social implications, see: Peritore, N. Patrick and Ana Karina Galve-Peritore, eds. (1995). *Biotechnology in Latin America: Politics, impacts, and risks*. Wilmington: SR Books.

outright conflict. A quick review of these relations over the past three decades is useful to identify the primary points of tension that would need to be resolved in order for these two forces to build a common agenda.

The decade of the 1980s saw the establishment of diverse alliances between environmentalists and indigenous and traditional peoples in favor of the conservation of tropical forests. The collaboration between the rubber-tappers union and the international conservationist movement successfully engendered a new type of protected area – the Extractive Reserve – whereby forest dwellers, organized in Agro-extractivist Associations, gained usufruct rights to the Reserve in accordance with locally established utilization plans. Another high-profile effort of these two agendas during this same decade was the campaign against the construction of the Kararaô Dam – named after a Kayapó war chant – on the Xingu River. In 1989, an historic meeting was held in Altamira, Brazil, between representatives of Electronorte, the company responsible for the construction of the dam, and over 600 Kayapó warriors and representatives of the international environmental movement, along with a considerable presence of the international press corp and some pop stars, such as Sting.[63] The force of the protests and the negative publicity which it generated for the Brazilian government and international financers led to the indefinite postponement of the dam and was hailed as a key victory of the indigenist-environmentalist alliance.[64]

The decade of the 1990s, on the other hand, was filled with moments of tension between these two agendas regarding the overlapping of indigenous territories and protected areas that did not allow for human inhabitants (such as National Parks). In Brazil, the promulgation of the Law of the National System of Conservation Units (SNUC) in 2000, after ten years of rancorous debates between conservationists and indigenous peoples, established the new category of "sustainable use protected areas", but left existing conflicts unresolved.[65] In 2010, the International Union for the Conservation of Nature (IUCN) published a study titled Superposición de territorios indígenas y áreas protegidas en América del Sur in which it found that of 802 national-level protected areas in South America, 220 (or 27%) had some type of superimposition with indigenous territories.[66]

In the decade of the 2000s, the topic of climate change gained prominence within the environmental agenda, and tropical forests entered into international negotiations as potential generators of carbon credits through the REDD+ program. The initial environmentalist formulators of these credits did not adequately contemplate indigenous rights over their forests and many indigenous peoples' organizations feared that carbon credit schemes would threaten the collective rights to their territories. At a meeting organized by the International Forum on Globalization (IFG) in 2009 in Washington, D.C., international indigenous leaders and representatives of large environmental non-governmental organizations hammered out an agreement between their respective agendas, indicating that the rights language contained in the UN Declaration on the Rights of Indigenous Peoples would serve as the basis for the formulation and implementation of REDD+ programs.[67]

One of the long-term consequences of these turbulent relations is a mutual lack of confidence between these two political agendas.[68] One of the points of contention resides in their differing approaches to negotiation and to the resolution of conflicts. Amongst the more technocratically oriented environmentalists, the "stakeholder approach" to negotiations predominates in which all the parties with a stake in the conflict sit down to negotiate a solution with the help of an external facilitator. The term stakeholder gained sway in the United States with the expansion of placer gold mining whereby financial backers would put up money with assurance that they would own a "stake" in the profits that could eventually flow from the mining operation. If no gold was found, this stake simply became a bad bet. In the application of this methodology to conflict resolution, each of the stakeholders gains a seat at the table of negotiations, regardless of the inequality of power that each of them may hold.

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63 Turner describes the event as both a rigorous protest and an "international media circus". See: Turner, Terence. (1993). "The role of indigenous people in the environmental crisis: The example of the Kayapó of the Brazilian Amazon". Perspectives in Biology and Medicine 36(3): 526-545.

64 Conklin, Beth and Laura Graham. 1995. "The shifting middle ground: Amazonian Indians and eco-politics". American Anthropologist 97(4):695-710.

65 Ricardo, Fany, org. (2004). Terras indígenas e unidades de conservação da natureza: o desafio das sobreposições. São Paulo: Instituto Socioambiental.

66 For a historical, global perspective of this phenomenon, see: Dowie, Mark. (2009). Conservation Refugees: The hundred-year conflict between global conservation and native peoples. Cambridge, MA: MIT Press.

67 International Forum on Globalization. (2009). Ensuring indigenous peoples' and forest-dependent communities' rights in REDD. San Francisco: IFG.

68 A lead article by Chapin produced a widespread polemic concerning these relations. See: Chapin, Mac. (2004). "A challenge to conservationists". World *Wa*tch Magazine, Vol. 17, No. 6. For a series of replies to his article, see: "Responses to 'A challenge to conservationists'". World Watch Magazine, Vol. 18, No. 2 (2005).

Indigenous peoples' movements and their allies prefer a "rights-based approach" in which the collective rights of social actors involved need to be recognized and respected by all parties before negotiations can proceed. In the stakeholder approach, the question of rights is considered to a negotiable item whereas in the rights-based approach this issue needs to be resolved beforehand. For indigenous peoples, the stakes involved are not a bet made in the hopes of winning a jackpot but rather their basic inalienable rights. In spite of these differences, the two approaches are not mutually exclusive and can be combined successfully under the right circumstances.

1.4. The labor agenda

The claims of environmentalists and indigenous peoples have dominated the agendas for change in Amazonia, which has left the labor agenda in a marginal position. The model of industrialization that mega-development projects are installing in Amazonia is only possible with the labor power of thousands of immigrants (national and international) who work in immense enclaves where the union presence is minimal. Amongst these immigrant workers who work under precarious conditions, lies the possibility of constructing a labor agenda that promotes dignified working conditions and better pay.

The labor experiences of the Santo Antonio, Jirau and Belo Monte hydroelectric dams – the three largest Brazilian dams of the current dam building spree – have been marked by constant confrontations between labor and management, some of which have turned violent. In 2010, for example, workers in the Jirau enclave in Rondônia revolted against their poor working conditions and burned company buses and destroyed buildings within the enclave. The response by the company was immediate: they expelled all 22,000 workers from the enclave, leaving them to fend for themselves in a region far from their homes where municipal and regional governments were already overburdened. Meanwhile, at the Belo Monte Dam in Pará, the first two years of construction have witnessed 18 different occupations led by indigenous peoples and environmentalists and 17 work stoppages by the labor force, which ballooned to 27,000 workers.[69]

The demands of these workers for better working conditions and salaries represents a clear political agenda emanating from Amazonia which, so far, has been separate from the environmental and rights agendas. This lack of connection between these agendas stems from the contradictory role that workers play in this situation since they depend for their livelihoods on the very projects that are destroying the livelihoods of others.

Though the labor agenda is not a focus of this study, several potential points of collaboration with the other two agendas can be identified:

1. One of the pillars of the struggle for the recognition of the collective rights of indigenous peoples is Convention 169 of the ILO, a labor organization. The temporary Amazonian workers in mega-projects could receive support and guidance from this very organization and, in the process, begin to construct an agenda that conciliates their labor needs and demands with the livelihood concerns of indigenous peoples.

2. Possible points of collaboration between the labor and environmental agendas could involve a two-pronged effort to establish global standards of corporate responsibility. Labor organizations are primarily concerned with the internal behavior of corporations, while environmental organizations are more preoccupied with the external environmental consequences of this same corporate behavior. These two agendas have as a potential meeting point the issue of corporate responsibility, broadly conceived, and could develop a common agenda for pressuring corporations to adopt more acceptable behavior. The diverse environmental "Round Tables" that have formed around different economic sectors – timber, soya, beef, palm oil – have shown mixed results with regard to environmental issues and rarely address labor issues.

2. THE CONSTRUCTION OF PAN-AMAZONIAN NETWORKS FOR CHANGE

A pan-Amazonian theory of change

The theory of change outlined here seeks to guide the development of strategies and tactics capable of defending the interests and promoting the claims of Amazonian social groups in their search for more just and less damaging models of development. The analysis used in this study works from the precepts of "political ecology." The starting point of the analysis is frontier dynamics, as explained in the first section of this study, which bring into purview the forces of environmental destruction and socioenvironmental

69 There have also been several legal injunctions that have temporarily stopped construction of the dam, though the government has been able to overturn them using the artifice of "economic security suspension", a holdover from the military dictatorship which is still in force. For a list of all legal processes that have been brought against the Belo Monte Dam so far, one can visit the following website: www.prpa.mpf.mp.br/news/2013/arquivos

conflicts over the use and management of forests, soils, rivers, minerals and other natural resources. When viewed from this perspective, environmental issues in Amazonia are invariably political ones as well since they involve the economic and political powers that are imposing their vision of development on the region.

The current model of development based in the construction of scores of mega-development projects throughout the Basin is producing the aforementioned pan-Amazonian socioenvironmental impacts of industrialization, urbanization, deforestation and ecological crises. One of the most salient characteristics of these large-scale projects is that they are planned by non-Amazonian persons and organizations to attend to demands that are also external to the region. In the process, these projects systematically exclude Amazonian peoples in the planning and the decision-making phases.

One set of proposals for an alternative model of development is founded in the experience and practice of Amazonian peoples and is geared to meeting their needs and desires; in short, an Amazoncentric development. In order to attain this goal, a coherent vision capable of joining the disperse claims of social movements into a cohesive political platform is needed. The construction of such an endogenous pan-Amazonian vision is in its incipient phase. The letter of commitment of the Sustainable Amazonia Forum, for example, exhorts the more than 200 signatory organizations to unite forces in order to "change the recent history of Amazonia so as to promote harmonious integration with other regions."[70] In a more academic vein, Sachs proposes that Amazonia can be a "laboratory of biocivilizations of the future," with the caveat that this will only be possible through the "reinvention of the developmentalist State."[71] Following the path blazed by the World Social Forum, this vision can share in the affirmation that "another Amazonia is possible."

Historically, expanding frontiers have been marked by violent conflict and the absence of the regulatory influence of the State, in which the public sector is poorly structured and subject to domination by powerful economic forces. Proposals to establish public forums for debate and action concerning development are geared to promote the broader public interest, to protect collective rights, to regulate private interests and to provide for a democratic framework for resolving conflicts on Amazonian frontiers.

A continuum of tactics is available for implementing this pan-Amazonian strategy and choosing which tactics to use will depend upon the specific issues being addressed. At one end of the continuum are collaborative actions geared toward gaining more participation in decision-making processes. At the other end are actions of confrontation and active resistance. Both "styles" of political action have a role to play in the change process and can operate within the same movement, though often with latent tensions and mutual apprehension. A quick review of both styles of action will offer a glimpse of the range of tactics currently being employed.

One of the primary spaces for participation is the formulation, negotiation, implementation and enforcement of public policies, defined here as the technical and social norms established by a citizenry for the management of public goods. The construction of a democratic public space, therefore, requires actions that empower marginalized groups such that their voice can be heard regarding the construction of new public policies. Collaborative efforts in the production and management of knowledge can serve as a counterweight to the trend of the privatization of knowledge and its control by private corporations. Many civil society organizations already have wealth of information about the Amazon forest, development projects and indigenous peoples and can work towards better management and dissemination of this knowledge. Still another tactic involves educational campaigns geared to influencing public opinion in favor of the needs of Amazonian peoples. The AmoAmazonía ("I love Amazonia) campaigns in Peru and Ecuador have performed exemplary efforts in this regard.

The existing activist networks offer a foundation upon which greater coordination of actions between disperse social actors can be built. The networks which have permeated

70 The Manifiesto of the IV Pan-Amazonian Social Forum, held in Belém, Brazil in 2009, announced that "we know that Pan-Amazonia is one of the most important battlegrounds for saving the planet and humanity".

71 Sachs, Ignacy. (2008). "Amazônia: laboratorio das biocivilizações do future". Territórios da Cidadania. Online edition.

this study – RAMA; RAISG; ARA; RLIE; BICECA; Plataforma BNDES; lista BNDES en la Mira; Oilwatch; International Rivers; among others – are currently performing high quality, specialized work and form the nucleus of a broad coalition. Another pending, and difficult, task of these networks involves gaining access to the closed spaces of decision-making about mega-projects, whether these are within the halls of governmental, the banking sphere or the board rooms of private corporations.

With regard to tactics of direct action, social mobilizations are designed to apply political pressure to centralized power as well as gain widespread visibility and popular support for the pan-Amazonian socioenvironmental cause. The cases of Peru's National March for the Right to Water, the Ecuadorian Indigenous People's March for Water, Land and Dignity and Bolivia's March in Defense of the Isiboro-Sécure Indigenous Territory and National Park (TIPNIS) are just three examples in recent years.

Lawsuits are an important tactic of direct demands and the Inter-American System on Human Rights, with headquarters in San José, Costa Rica, is an influential venue for this type of action. In 2012, the indigenous peoples of the Sarayacu indigenous territory in Ecuador won a landmark case in the Inter-American Court of Human Rights (IACHR) which ruled that Ecuador must apologize, consult with and recompense the Sarayaku people over an oil project which damaged their ancestral lands and put their lives at risk in the Amazon region in eastern Ecuador. In another case, a group of Brazilian citizens filed and won a petition from the Inter-American Commission of Human Rights requiring the Belo Monte Dam consortium to conduct adequate prior consultation with indigenous peoples. Yet, after a forceful rejection of the Commission's ruling by the Brazilian government, the Commission backtracked and the construction of the dam proceeded. Indigenous peoples from Bolivia have brought a case to the Commission claiming that the Bolivian government is violating their territorial rights by the proposed construction of the TIPNIS highway through their homeland.

International campaigns are an important tactic of resistance to mega-development projects. These campaigns are usually directed at large multinational corporations and designed to support to indigenous peoples in their efforts to stop their construction or, at least, observe the requirements of free, prior and informed consent. Campaigns against three oil companies that work in Amazonia – Occidental Petroleum, Talisman and Chevron – have achieved significant results, including the decisions by Talisman and ConocoPhillips to leave Peru and the decision by the Ecuadorian Court against Chevron.

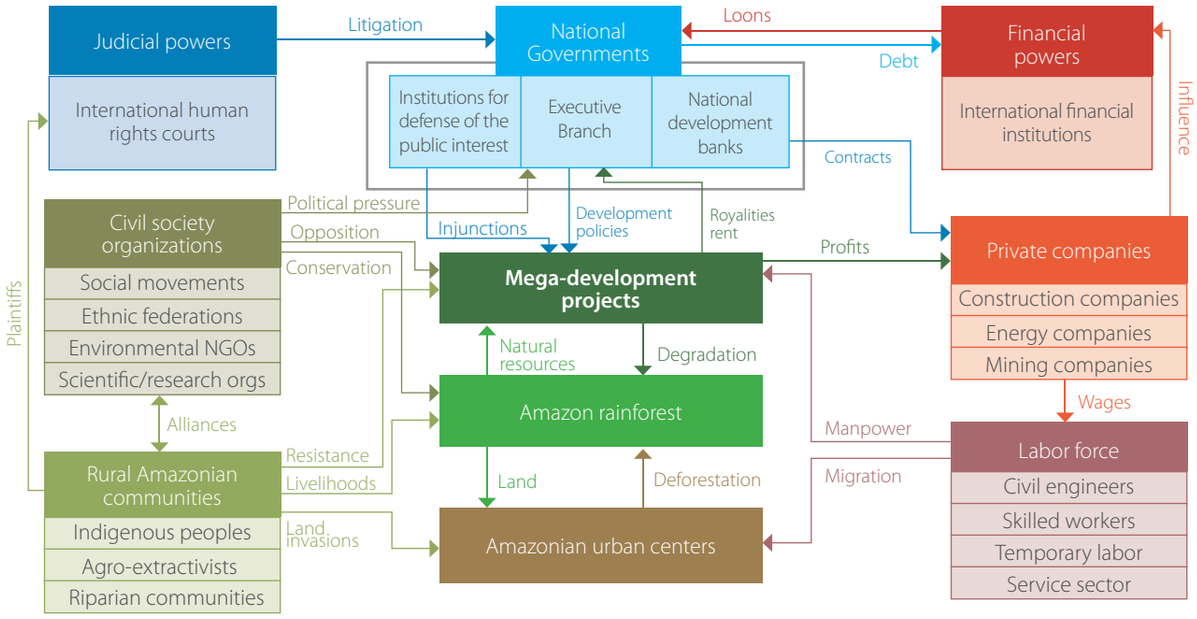
A conceptual map of Amazonian development

The use of a conceptual map of the principal forces of Amazonian development is useful for implementing this strategy for change. In Figure #6, each of the boxes in bold letters represents a site of power of political and economic action. The adjoining boxes below name the main types of socioeconomic actors that operate within each site. The arrows show the flows, directionality and intensity of interactions between different sites of power, with thick one-directional lines signifying relations of domination and thin two-directional lines representing reciprocal relations. This generalized conceptual map can then be applied to different regional frontiers in Amazonia where the names of specific socioeconomic actors can be placed together with their respective set of interactions.

The upper right portion of the map shows a strong symbiosis between national governments, financial powers and private companies in support of the existing model of development. Meanwhile, sites of power encompassing "civil society organizations", "rural Amazonian communities" and "judicial power" often form strategic alliances to contest the status quo and demand more just development policies that take into account the needs of local populations and the tropical forest. The "labor force" and "Amazonian urban populations" occupy a marginal role in this overall scheme, since these workers and urban dwellers gain employment from mega-development projects, but also suffer from many of their negative impacts. The "Amazon rainforest", for its part, is beseiged on several fronts.

Figure 6

Conceptual Map of Amazonian Development



PROPOSAL OF PRIORITY TOPICS AND ACTIONS

The power relations expressed in the conceptual map are helpful in delineating strategies for change and identifying priority topics and actions. In the remainder of this study, suggestions will be made concerning priority topics and actions geared towards the creation of an alternative model of development. The criteria used in this prioritization exercise include: working with key social actors; resolving "bottlenecks" in environmental licensing and controls; establishing new spaces for public participation; and targeting vulnerabilities in the power structures of the status quo. These criteria must then be assessed according to their political viability and social their urgency. This prioritization can also serve as a useful planning guide for the budgeting of time and human and financial resources and for the launching of campaigns.

2.1. The collective rights of peoples

Indigenous peoples' defense of collective and territorial rights is at the heart of their political agenda. The tactical use of legal and human rights institutions is one of their most important tools. Two areas are identified as priorities: the struggle for Free, Prior and Informed Consent and the new Constitutional Rights they have recently gained.

2.1.1. The right to Free, Prior and Informed Consent

The ILO Convention 169 is the primary international legal instrument guiding policy on Free, Prior and Informed Consent. The legal frameworks of nation-states have also advanced in this regard, as seen in the following items: the decision of the Colombian Constitutional Court requiring the State to conduct prior consultation with indigenous peoples;[72] the promulgation of a Prior Consultation Law in Peru in September of 2011;[73] and the establishment of rules of access to and use of traditional knowledge by the National Council for the Management of Genetic Heritage (CGEN) in Brazil.

The designation of a mega-development project by a State as being in the "national interest" tends to trump the right to Free, Prior and Informed Consent, which has often led States to simply ignore its use. The insistence by the Brazilian government on building the Belo Monte dam and by the Bolivian government on building the Villa Tuanari-San Ignacio de Moxo highway in the face of strong popular resistance and international outcry indicate the high priority that government leaders place on mega-development projects. The difficulty in even questioning such projects is one of the most intractable problems facing indigenous peoples. In many cases, indigenous peoples learn of the construction of a major dam or highway in or near their

72 CEDLA – Centro de Estudios para el Desarrollo Laboral y Agrario. (2012). Derechos indígenas en la Comunidad Andina de Naciones/Memoria del taller/con el CCPICAN. La Paz: CEDLA, p. 11.

73 Perú: Informe Alternativo 2012 – Sobre el cumplimiento del Convenio 169 de la OIT. (2012). Lima: Sonimágenes del Perú.

territories only after the project has been approved. The project thus arrives into the region as a "done deal," leaving the indigenous peoples with the unattractive option of negotiating the terms of mitigation and compensation, but denying them a voice or vote in the decision to build the project in the first place.

Here it is instructive to make a distinction between "consultation" and "consent." The process of consultation refers to actions of "conferring" with the concerned parties regarding the proposed project. The process of consent is much stronger, since it implies that indigenous peoples should have a type of veto power over the construction of the project if they decide that it will cause them irreparable harm. Nation-states and private corporations are reticent to grant the right to consent, considering it to be an enormous, and unnecessary, obstacle to their developmentalist designs. The U.N. Declaration on the Rights of Indigenous People goes further than ILO Convention 169 in establishing the right of indigenous peoples to self-determination and providing for a broader reading of Free, Prior and Informed Consent. And while the Declaration is not a binding document, but only a signed statement of principles, it can still be used as an international standard in negotiations between indigenous peoples and development projects.

2.1.2. The new rights enshrined in national constitutions

The promulgation of new national constitutions in Amazonian countries over the past twenty-five years has greatly improved the legal situation of indigenous peoples and opened up new spaces for political and legal action. As the founding legal document of nation-states, many of these constitutions grant rights for indigenous peoples, with the recent constitutions of Ecuador and Bolivia being in the forefront of this tendency. The formal granting of these new rights, however, does not guarantee that they will be implemented in practice and much work needs to be done to turn them into reality. Four rights are identified below as being in particular need of implementation.

The Right to Well-being: One of the themes that permeates this study is the need to institute a alternative model of development for Amazonia. The Right to Well-Being, which is granted in the Ecuadorian Constitution, serves as an excellent means to promote such a model, particularly in reference to indigenous peoples. The strengthening of their processes of territorial management and governance, the implementation of economic alternatives (including their associated monetary systems) and the promotion of community health programs are just a few examples of how this new right could be advanced within the framework of collective rights. In this way, proposals for their collective well-being would emanate from the worldviews and practices of each indigenous society.

The Rights of Nature: Ecuador is the first nation in the world to recognize the rights of nature in its constitution. Now the task of turning this right into reality lies ahead. The environmental impacts generated by large-scale infrastructure and extractive projects can form the basis for lawsuits, brought by local communities and civil society organizations, for the violation of these rights. Through subsequent court proceedings and rulings, clear interpretations of just what these rights mean in practice should emerge. An international network was formed in Ecuador in September of 2010 to promote these rights and is organized under the title of the Global Alliance for the Rights of Nature (www.therightsofnature.org).

The Right to Self-determination: The autonomy of indigenous peoples within the framework of nation-states is one of the most important concepts that has emerged from this new wave of national constitutions. There are many formats for autonomy and each has a different scope. Self-governance is unquestionably one of the pillars of self-determination and invariably involves control by indigenous peoples over their territories and the natural resources contained within them. Self-governance can include processes of the development of a people's own systems of justice, health care and education.

The Right to Egalitarian Legal Pluralism: The recognition of the plurinational nature of Amazonian countries is a significant advance for indigenous peoples, particularly when one considers that just forty years ago military governments in the region were promoting the policy of "living borders" which sought to colonize their border regions with settlers having a strong "national" identity, with the clear implication that indigenous peoples were not full-fledged, national citizens. One of the most difficult elements to implement within the notion of plurinationality is a system of egalitarian legal pluralism in which there is a mutual recognition of different systems of justice for the solution to conflicts in areas impacted by development projects. For this to occur, distinct forms of articulation between national and indigenous justice systems need to be established within a framework of intercultural dialogue.

2.2. Social and environmental safeguards and controls

2.2.1. Priority focus on BNDES and Chinese banks

OThe new global financial landscape described earlier requires new types of proposals for environmental safeguards and control that build upon the experience of the past thirty years with international financial institutions. During a seven-year period (2005-2012), the BICECA (Building Informed Civic Engagement for Conservation in the Andes-Amazon) project, led by organizations in the United States (Bank Information Center – BIC), Peru (Derecho Ambiente y Recursos Naturales – DAR), Colombia (Instituto Latinoamericano de Servicios Legales Alternativos – ILSA) and Brazil (Amigos da Terra-Brasil), was a key network for investigation and dissemination of information on mega-infrastructure projects in Amazonia, with focus on the World Bank, the Inter-American Development Bank and other international financial institutions.

The challenge facing civil society organizations today is learning how to apply the lessons from work with these institutions – where safeguards and controls have been consolidated – to national development banks such as BNDES and the Chinese Development Bank which have expressed little interest in adhering to these international standards. Given the large amount of financial resources that these two banks are investing in Amazonia and the magnitude of the transformations they are producing, there is an urgent need to influence the way that they operate with regard to mega-development projects.

Efforts by civil society organizations to influence decisions by BNDES are on the rise, with networks operating both inside of Brazil and internationally. The Brazilian Network on Multilateral Financial Institutions (Rede Brasil), which has extensive experience working with international institutions that invest in Brazil, are now giving increased attention to BNDES. In 2012, this network published the book Ambientalização dos bancos e financeirização da natureza: um debate sobre a política ambiental do BNDES e a responsabilização das instituições financeiras, organized by João Roberto Lopes Pinto, which includes several trenchant analyses of BNDES. The Plataforma BNDES, created in 2007, works for the democratization of BNDES and a redefinition of national development. Recently, internal disputes within this network have slowed its work and can be traced, in part, to differing approaches to change. Furtado and Strautman identify two competing theories of change operating within the broader movement: (i) a "reformist critique" which "considers safeguards to be an efficient instrument for securing environmentally responsible behavior by banks" if they are adequately applied;[74] and (ii) a "confrontational critique" which argues that "these institutions cannot be reformed and that changes in their discourse do not lead to changes in their behavior."[75]

In 2012, an international interest group, known as "BNDES en la Mira" emerged and was initially comprised of civil society organizations from Hispanic America, though in regular dialogue with their Brazilian counterparts. This group adds a specific international dimension to work on BNDES, since these organizations are from countries where BNDES is making sizable investments and producing major social and environmental impacts.[76] Their basic argument is that now that BNDES has become a major international financial player, they can no longer hide behind a nationalist discourse and have the obligation of meeting high international safeguard standards. The 2013 Action Plan of this group states as its general objective: "To achieve, by 2018, the implementation by BNDES of social and environmental safeguards that guarantee the respect for environmental and human rights of communities potentially affected by projects that it finances and of a policy of transparency and effective participation that guarantees ready access to relevant information about the projects they finance both within and outside of Brazil" (emphasis in original).[77]

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74 Furtado, Fabrina and Gabriel Strautman. "Ambientalização dos bancos: da crítica reformista à crítica contestatária". En Ambientalização dos Bancos e Financeirização da Natureza: um debate sobre a política ambiental do BNDES e a responsabilização das Instituições Financeiras. J.P. Lopes Pinto, org. 2012, p. 34.

75 Ibid., p. 37.

76 One of the group's first actions was to research a set of problematic projects from all parts of Latin America financed by BNDES which are generating, or have the potential to generate, significant negative impacts. The collection of studies is scheduled for publication in book form in early 2014.

77 The creation of this interest group was the initiative of Derecho Ambiente y Recursos Naturales (DAR) of Peru and the Asociación Interamericana de Defensa del Ambiente (AIDA). DAR has indicated that the strategy of improving governance and strengthening social and environmental standards for infrastructure projects in Amazonia is one of the regional objectives that orients this work. It will be undertaken in coordination with other networks and actors such as Articulación Regional Amazónica and Grupo de Infraestructura (ARA Regional), Red Jurídica Amazónica (RAMA), Latindad and RLIE. The strategy of improving governance (i.e. prioritizing citizen participation and better institutional transparency by development actors) is a necessary step towards understanding and influencing the construction of social and environmental safeguards in regional development institutions.

One of the most important elements of the process of influencing the governance of BNDES has been the coordination between diverse social actors and initiatives. In 2013, three international seminars were held in Brazil that initiated a dialogue between BNDES and civil society organizations from throughout the Latin America, with the goal of establishing long-term mechanisms of transparency and participation in the development and effective implementation of social and environmental safeguards. These meetings were organized by the Brazilian NGOs IBASE and INESC in collaboration with the Peruvian NGO DAR and were began the arduous process of establishing channels of direct dialogue and exchange with BNDES with regard to their financial investments throughout the region.

The long-term process of building a foundation for future work on Chinese banks has also begun, though this will require a different set of information networks and political channels that are able to overcome linguistic, geographic and cultural barriers. The increasing size of Chinese investments in Amazonia, and Latin America in general, require that these banks be included in the work to secure adequate social and environmental safeguards. Two organizations that have taken the lead in this task are International Rivers, which published in 2012 an excellent report titled The New Great Walls: A guide to China's Overseas Dam Industry, and the World Resources Institute – WRI which has made a series of studies on Chinese Banks available on its website at www.slideshare.net/WorldResources. In October of 2013, a meeting was held in Hong Kong, sponsored by Friends of the Earth (UK), the Ford Foundation, the Chinese University of Hong Kong and a Chinese NGO in which the role of national development banks in the international financial sector was discussed, with special attention given to the topics of social and environmental safeguards, transparency in the dissemination of information and financial accountability.

2.2.2. Strategic Environmental Assessments

AThe requirement that Environmental Impact Assessments (EIA) be conducted for all large-scale development projects prior to their construction was a major advance for environmentalists that has been consolidated in the region over the past twenty years. In spite of many gaps in this instrument – such as its lack of adequate analyses of social impacts – EIAs continue to be a necessary tool for understanding the potential impacts a mega-project can generate and for developing mitigation and compensation mechanisms. However, with the massive new spate of building of mega-projects in Amazonia, this tool has proven to be inadequate for measuring the multiple impacts from the simultaneous construction of numerous projects in a single region.

A need has emerged for an instrument capable of evaluating the social and environmental impacts at large geographical scales and longer timeframes. Over the past ten years, a new type of study – the Strategic Environmental Assessment (SEA) – has emerged within international financial institutions to fill these gaps and has begun to be used in different parts of the world.[78] The main advance that a SEA offers in relation to an EIA is its strategic dimension whereby the results of the study are incorporated into the broader regional planning process where it can serve as an important input for understanding long-term impacts and for projecting future development needs. Five key elements are identified below that distinguish a SEA from an EIA.

- **Regional scale:** A SEA has a larger geographic scope that an EIA, which is limited to the immediate scope of a single development project. In general, the scope of a SEA can include an entire watershed, province or ecosystem with the goal of understanding the social and ecological dynamics that would occur within this larger area.

- **Multi-sectorial:** An EIA deals with only one project that belongs to a single economic sector. A SEA evaluates several projects from different economic sectors that are being proposed for construction in a specific region: transportation (highways, railroads); energy (petroleum, gas, hydroelectricity); agriculture (soya, oil palm, cattle); forestry (timber production); mining (gold, silver, bauxite).

- **Long-term:** A SEA uses a much longer timeframe than an EIA. By incorporating ecological processes as an integral part of its evaluation of impacts, it must address factors that are only expressed in long durations such as hydrological cycles, regeneration of forests, depletion of natural resources and global climate change.

- **Cumulative and synergistic impacts:** An important innovation of the SEA is its effort to understand the cumulative impacts from the implementation of several mega-projects from different economic sectors and to analyze the synergistic interactions (both positive and negative) that the construction of these varied projects may produce within the broader regional scope.

78 Four of these institutions are: Internacional Association for Impact Assessment (IAIA); World Bank; Organization for Economic Cooperation and Development (OECD); and Inter-American Development Bank (IADB). Specific cases from each of these organizations are referenced in the bibliography as: IAIA (2002); Kulsum et al. (2005); IADB (2006); and OECD-DAC (2006).

- **Alternatives:** The regional and multi-sectorial vision of development that a SEA contains allows for the elaboration of possible alternatives of development since it is not tied to any specific type of project or any specific economic sector, as is the case with EIAs. The proposal of alternatives also serves as a significant contribution to regional planning processes and for the confection of regionally based plans for sustainable development.

The proposal here is that the use of SAEs, whose design and methodology will need to be adjusted to the specificities of the region under study, should be demanded by local communities and civil society organizations as a required tool for all processes of regional development planning. A related demand would be for their active participation in the conducting of these studies. Finally, the information produced by these studies should be made available to the population in general and disseminated through readily accessible means.

2.3. Socioenvironmental governance

2.3.1. Influence over decision-making on mega-development projects

The process of decision-making concerning the viability, construction and operation of mega-projects needs to become part of a democratic debate that is transparent and allows for ready access to all relevant information. Such a decision-making process would be based in dialogue between the private sector, the government, civil society organizations and local communities within the multiple sites of power surrounding a mega-project. In order for this to happen, prior training in the field of development planning and analysis would need to be instituted.

Given the large number of mega-projects currently under construction or in the planning phase, any effort to influence this overall process would also need to have a system of choosing which projects should receive priority attention. Among the criteria involved in such a prioritization exercise are the magnitude, geographic scope, duration and irreversibility of the potential environmental impacts. With regard to social impacts, criteria should include the number of impacted people, the potential for violation of collective rights and the possibilities of facilitating deforestation and uncontrolled urbanization.

Civil society organizations and scientific researchers have developed instruments to help them prioritize which mega-projects need to receive the most attention. The Conservation Strategy Fund (CSF), with operating sites in the United States, Brazil and Bolivia, and work in other Amazonian countries, has developed two useful tools: the Roads Filter and the HydroCalculator. The Roads Filter, an instrument designed to measure the risks of highway projects in Amazonia, was applied in 2011 to 36 proposals for the construction of roads in five Amazonian countries. The Filter classifies projects according to their degree of environmental, social, economic and cultural risks. The HydroCalculator is an interactive tool in which users can develop their own analyses of the economic viability of hydroelectric projects, as well as compare certain environmental and social indicators with other proposed hydroelectric dams. Both tools are available at the CSF website: http://conservation-strategy.org.

While much work on mega-projects is limited to individual projects, there are also opportunities to extend the effect of this work beyond specific cases. For example, to the degree that a particular project adopts a set of stringent safeguards or implements an innovative compensation program, these can then be used as a precedent to pressure other companies to adopt them. The efforts to influence an individual mega-project can lead to the construction of regional, national and international alliances that can be used to develop common strategies and mobilize popular support for work on other projects. Nonetheless, a campaign against a specific project can produce tensions – and even provoke divisions – within a support network over the strategies and tactics to be employed. The campaign against the Belo Monte Dam is instructive in this sense, since there has been a falling out amongst two sets of local and civil society organizations: those that oppose the building of the dam at all costs and those that believe that the dam will be constructed over their objections and, as such, they need to negotiate the best terms possible from the construction consortium.

2.3.2. Use of the Mitigation Hierarchy

In order to effectively exert influence over the construction of mega-development projects in Amazonia all phases of their installation must be taken into account: Prior planning and analysis; Design; Construction; Monitoring; Enforcement. One of the most important decisions to be made is whether the project should be built or not. To enter into the debate after this key decision has already been made puts local communities and social groups at a distinct

disadvantage, since they are left only with the possibilities of performing rearguard actions of minimizing impacts or extracting compensation monies and do not play a protagonist role in the process.

Over the past five years, several environmental non-governmental organizations and private foundations have worked collaboratively to develop a minimal protocol to be used in making of decisions about mega-development projects in Amazonia, widely known as the "mitigation hierarchy." This hierarchy consists of three issues – avoid, mitigate and compensate – to be addressed in sequential form, with each issue requiring a satisfactory set of responses before moving on to the next one. Only when the different stakeholders, including those potentially impacted by the project, have reached some type of agreement on the first issue – whether the project should be built or not – should they then move on the second issue of mitigation measures.

If stakeholder negotiations determine that a project is not viable in its current state or that certain social groups would suffer grave and irreversible damage, the application of the mitigation hierarchy would indicate that the project should not be built. If, on the other hand, the stakeholders conclude that the pending issues have been satisfactorily addressed, then the project would move forward to the second issue of mitigation measures. Although there are not fixed set of questions that would need to be answered for each of the three issues, there is a consensus regarding the general content of these questions. A set of questions, culled and systematized from several organizations and foundations, are presented below that would need to be satisfactorily answered in order for the mitigation hierarchy to proceed in sequential form.

Avoid

- Is the project economically and environmentally viable?
- Have alternative projects that would achieve similar results been considered?
- Have the groups who would benefit and those that would suffer from the project been identified and consulted?
- Has there been active participation of all stakeholders in the planning and decision-making phases?
- Taking into account the above-mentioned items, should the project be constructed?

Mitigate

- Has the best location for the construction of the project been chosen?
- Has low-impact technology been incorporated into the design of the project?
- Have the collective rights and livelihoods of indigenous peoples and local communities been respected?
- Have the potential environmental and social impacts of the project been evaluated and the results of the evaluation been widely disseminated?
- Has a plan for the mitigation of impacts of the project been developed in collaboration with the potential affected groups?
- Does the mitigation plan have adequate funding to ensure its full implementation?

Compensate

- Have the impacts that cannot be mitigated been included in a compensation plan?
- Were scientific criteria used in the development of the compensation plan?
- Was there community participation in the development of the compensation plan?
- Are institutional mechanisms in place for the transparent administration of the compensation fund?
- Does the compensation fund have adequate financing to ensure its full implementation?
- Have the benefits of the compensation program been delivered to the groups most affected by the project?

2.3.3. Innovative policies of natural resource management

Although much public policy work occurs at the national level where they guide actions throughout the entire country, the formulation and implementation of policies at sub-national levels such as departments, provinces, states and municipalities offer a series of other advantages. First, public policy work at these levels allows for much greater access to and direct participation in political spaces since they are located closer to the community level. By dealing with problems that directly affect local communities, more opportunities exist to understand the policies under

discussion and the positive and negative consequences that they may produce.

Second, the smaller geographic and political scope of these sub-national units facilitates the building of political alliances and the emergence of community leaders who are more in tuned with popular demands. Nonetheless, the existence of these opportunities is no guarantee that they will be utilized. The political control that regional oligarchies have historically maintained over Amazonian regions remains strong and presents a serious impediment to the implementation innovative policies that have popular support. Those social movements and groups that are interested in promoting new public policies need to build relations with an emerging political class.

Third, given the large number of sub-national governmental administrative units, there are a greater number of possibilities to experiment with new public policy instruments and mechanisms. Two such cases will be briefly mentioned here: the state of Acre in Brazil and the department of Loreto in Peru. With the election of Jorge Viana of the Worker's Party as governor of the state of Acre in 1998, a new group of political leaders and policy makers replaced the regional oligarchy that had dominated the state for decades and a new vision of development was placed under the rubric of the "government of the forest." This political group, which has maintained control of the state government since that time, has provided for a certain level of continuity to the implementation of a different development vision and of innovative environmental and social programs. One of the most significant achievements has been the promulgation of a law that establishes a state-level REDD+ program which has been a key factor in attaining national and international financial support for the payment of environmental services derived from the control of deforestation.

The second example is from the Loreto Department in Peru. The election of Iván Vásquez as President of the regional government in 2007, and the hiring of many civil society technicians and activists by this government, represented a major change in the way that regional development was conceived and implemented. An innovative program of regional protected areas was established with the philosophy that the local inhabitants of these areas should be able to gain their livelihoods through the sustainable use of the forest, in what was called "productive conservation."[79] During the second term of the Vásquez administration, the Loreto region faced many proposals for the expansion of large-scale economic activities and infrastructure projects, such as petroleum extraction, oil palm plantations, hydroelectric dams and new highways. In response to this situation, the government undertook an effort, in direct collaboration with civil society organizations, to compile and systematize cartographic information from the region in preparation of the undertaking of a Strategic Environmental Assessment of the Loreto Department. This effort was accompanied by a study, led by Marc Dourojeanni, of the current policies and investments in Loreto, together with recommendations for better social and environmental governance, which was published in 2013 under the title Loreto Sostenible al 2021.[80]

2.4. Public policies for development and trade

Influence over development and trade policies can occur at different levels of political action with each level having its own legal instruments and sociopolitical actors. Three such levels – national, bi-national and continental – are identified here. The thread that weaves together the themes of these three levels is the search for an alternative model of development for Amazonia.

2.4.1. The search for new national policies of Amazonian development

At the national level, focus will be given to policies of Amazonian development and sectorial policies. One of the most serious problems with the current model of Amazonian development as undertaken by national governments is their tendency to treat the region as a resource frontier in an effort to achieve "national" development. The practical result of these policies is the continuation of relations of internal colonialism whereby national governments exploit Amazonian resources to generate income for the State, while the majority of negative social and environmental impacts are incurred by local Amazonian populations. Perhaps the most notorious example of this – though there are many others – is the northeastern portion of Ecuador which suffered through forty years of contamination of its soils and rivers, intense deforestation and thousands of cases of illness and death stemming from oil extraction.

One of the mechanisms established to rectify situations such as these is the reinjection of part of the royalties generated by the extraction of Amazonian resources back into the region via provincial and municipal governments. While these efforts are certainly an improvement over

79 Proyecto Apoyo al PROCREL. (2010). Loreto: el bosque y su gente / the forest and its people. Iquitos: GOREL; IIAP; NCI.
80 Dourojeanni, Marc. (2013). Loreto Sostenible al 2021. Lima: DAR.

outright cases of internal colonialism, the arrival of these funds does not necessarily resolve the main problems in the region and, in some cases, may even aggravate them. The transfer of large sums of money to local governments tied to regional oligarchies can simply reinforce existing power relations with the use of these funds going to road building and other development projects that encourage the growth of cities and the continued arrival of settlers and miners, many of which may impinge upon indigenous lands. In this situation, Amazonian peoples suffer twice: first from the original extraction of resources by mega-development projects and then from the irresponsible use of royalty income by regional and municipal governments. One of the ways to improve this situation is to provide for processes of community-based planning in the use of royalty income. The long-term solution is for national governments to elaborate visions of development that are founded in the needs of Amazonian peoples and communities in an honest attempt at Amazoncentric development. The innovative policies occurring in some sub-national regions, as mentioned above, can serve as catalysts for this shift in focus.

The national sectorial policies of energy, transportation, mining and hydrocarbons also need to change in order to redirect them in ways more favorable to Amazonia and its peoples. With regard to energy and transportation policies, one of the most urgent tasks is to make sizeable investments in alternative sources of energy and for more environmentally friendly means of transportation, whether through expanded waterways or railways. With regard to mining and hydrocarbon policies, the most urgent tasks involve putting in place strict environmental controls, a revision of the way the concessions are leased and greater popular participation in the distribution and use of royalties.

2.4.2. The Peru-Brazil Energy Agreement

In recent years bi-national agreements have become the predominant modality for financing mega-infrastructure projects in Amazonia. In most cases, each project is the result of a specific agreement which includes the terms of its financing and construction. The exception to this tendency is the Peru-Brazil Energy Agreement which introduces several new variables into this process with potentially grave consequences for social and environmental issues. If this Agreement is approved and enters into force, it would establish a powerful precedent for the Amazon region as a whole and would severely limit the search for alternative sources of energy. Since this Agreement has not yet been approved by the two national congresses, there is still time to influence the negotiation process and for that reason it is identified here as a priority issue.

The Peru-Brazil Energy Agreement establishes a limit of 7,200 MW (6,000 MW plus 20% variation) of installed capacity for export of electricity to Brazil. Meeting this goal would require the construction of at least five mega-hydroelectric dams along with their respective transmission lines.[81] The Agreement requires that 80% of the electricity generated be exported to Brazil and establishes a 50-year timeframe for its execution, which would lock in Peru to the mode of generation of electricity and put Peru's energy security at risk by restricting its capacity to manage energy generated within its territory in order to meet future changes in internal demand. The example of the Bi-national Agreement between Brazil and Paraguay in the 1970s over the construction and operation of the Itaipú hydroelectric dam is instructive. Paraguay found itself tied to an agreement which, over time, became highly unfavorable and only after a series of threats and intense diplomatic negotiations was it able to renegotiate the price of energy it exported to Brazil.

Another set of concerns with this type of long-term agreement is the issue of social and environmental safeguards which are not currently clearly established. Once an agreement is signed, indigenous peoples would have a more difficult task in demanding that free, prior and informed consent policies be implemented since the two governments could argue that they are bound by the agreement to fulfill its goals. It would also limit Peru's ability to respond to changing social and environmental conditions brought about by climate change or extreme environmental events.

2.4.3. The new spaces for citizen participation in UNASUR

AThe Union of South American Nations (UNASUR) is an inter-governmental organization which was conceived as a space of dialogue, agreements and cooperation between the twelve South American nations and does not have the supra-national institutionality of commercial blocs such as Mercosur or NAFTA. Its highest decision-making forum is the Council of Heads of State. Among the most dynamic spaces within UNASUR are the Ministerial Councils, of which nine have been created so far, with the South American Council on Infrastructure and Planning (COSIPLAN) being

81 DAR - Derecho Ambiente y Recursos Naturales. (2001). El Acuerdo Energético Perú – Brasil. Los casos de Inambari y Pakizapango. Lima: DAR.

one of the most active due to its takeover of responsibility for the IIRSA program.

COSIPLAN has adopted the entire portfolio of projects of IIRSA and launched its own list of priority projects, indicating that it is following the previous model of high-level decision-making with little transparency or popular input. COSIPLAN has also adopted the strong commercial emphasis of infrastructure projects of the IIRSA program. One possible area of influence is to work for guarantees that all projects implemented by COSIPLAN adopt strict social and environmental safeguards. If these are adopted by the organism as a whole, this would provide a new source of leverage in the work with BNDES.

Article 18 of the UNASUR's founding treaty deals with "Citizen Participation" and, ostensibly, opens up a wide range of possibilities for the participation of civil society organizations, indigenous peoples, peoples of Afro-descent and other social groups. The capacity of these and other citizens groups to influence their respective heads of state, however, is minimal, raising a spectrer of "long and costly processes that do not necessarily translate in tangible changes in the lives of social groups."[82]

In spite of this possible outcome, civil society organizations from throughout the continent have expressed an interest in working to influence the policies of UNASUR. In November of 2012, a Seminar-Workshop was held in Bogotá on "Building a Strategy to Influence UNASUR and BNDES", which was jointly organized by the Instituto Latinoamericano de Servicios Legales Alternativos (ILSA) of Colombia and the Centro de Estudios para el Desarrollo Laboral y Agrario (CEDLA) of Bolivia and brought together representatives of indigenous peoples, peoples of Afro-descent, social movements and non-governmental organizations. The final document of the event, published in 2013 under the coordination of Héctor-Leon Moncayo, is titled UNASUR: opciones de participación de la sociedad civil and presents a wide range of possibilities for popular participation in UNASUR. The document also emphasizes that the work to influence UNASUR needs to establish a clear, overarching framework for the respect of human rights before establishing a definition of safeguards.

Other recent actions geared towards influencing UNASUR include seminars and workshops organized by the Frederich Ebert Foundation on security and investments with the organisms of UNASUR; the open letter of the Red Latinoamericana de Industrias Extractivas (RLIE) presented at the meeting of UNASUR in Lima in November of 2012 which addressed the issue of its investments and opening up participation in the organism;[83] and a workshop organized by Derecho Ambiente y Recursos Naturales (DAR) in April of 2013 in Lima with a host of organizations from the region in which a work plan was developed to introduce mechanisms of citizen's participation and transparency in the decision-making process of UNASUR, especially those of COSIPLAN which is responsible for establishing priorities for infrastructure projects. These efforts culminated in the decision taken by the member countries at the VII Regular Meeting of UNASUR in Paramaribo, Suriname in August, 2013, to create a Forum of Citizen's Participation in UNASUR.

82 Revilla, Carlos. (2012). "Documento de actualización sobre oferta de participación en UNASUR". La Paz: Centro de Estudios para el Desarrollo Laboral y Agrario, p. 35.

83 ARA Articulación Regional Amazónica. (2012). "Apuntes sobre UNASUR y COSIPLAN". Belém, p. 3.

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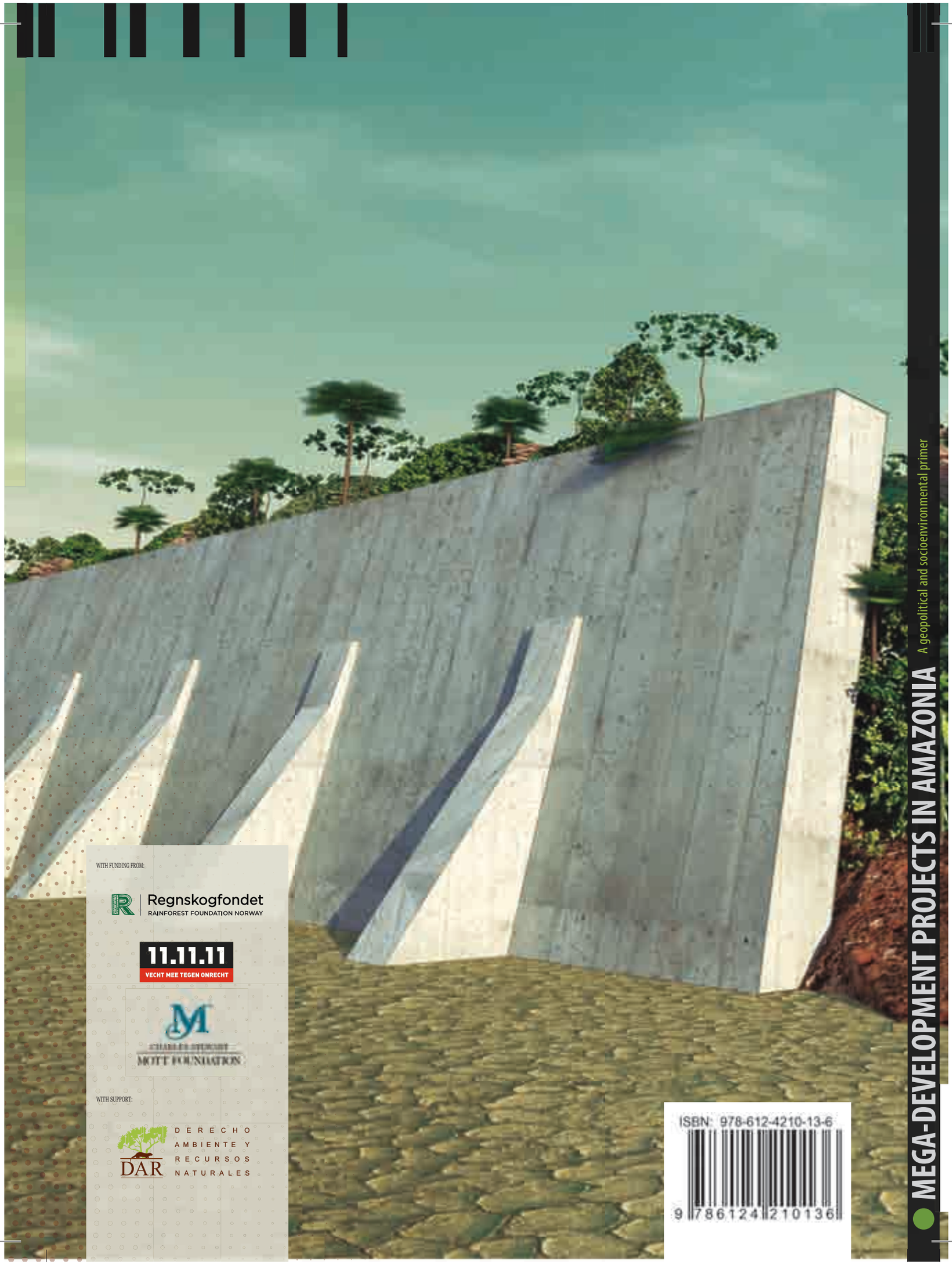

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