UP 265C – Food Systems
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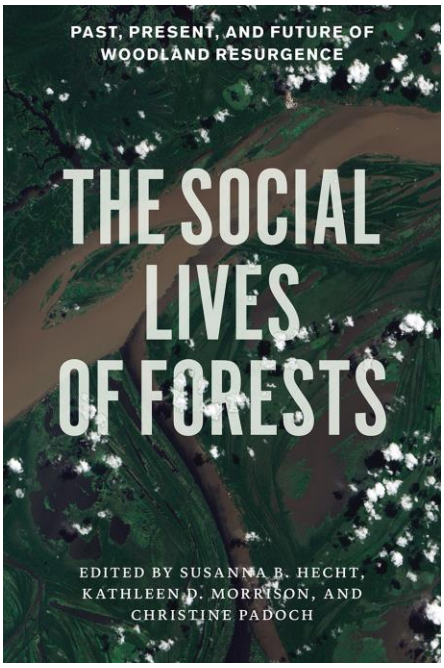

"The Social Lives of Forests: Past, Present, and Future of Woodland Resurgence," edited by Susanna B. Hecht, Kathleen D. Morrison, and Christine Padoch, is a collection of twenty-eight essays that have been distributed into five parts: Conceptual Frameworks, Historical Ecologies, Market Dynamics, Institutions, and The Urban Matrix. In unison, this assembly of the insights derived from rigorous and multi-disciplinary research of social forests throughout time in the tropics and sub-tropics (in some instances, in temperate areas), decants in a surprising array of arguments that tell a story which is quite different from -in some instances opposite to- the mainstream narrative of tropical forest destruction.

The authors pin-point several of the conceptual challenges posed by forests. The first shortcoming they identify relates to their very definition. In the terrain we have inherited from the second peak of what economic urban geographers refer to as hyper-globalization, tropical forests have come to mean, more than anything else, biodiversity sanctuaries to be conserved, "natural" or "empty" (devoid of humans or people who count as human) sites being devastated, or strategic CO2 sinks in the face of global warming. Hecht, Morrison, Padoch, and the collective of authors included in this book, call for a revision of the taxonomies we assign not just to forests, but also to what we define as urban and rural. The concepts, as we imagine them, they argue, do not correspond to the realities on the ground. They invite us to penetrate the realm of hybrid, complex zones that have remained largely invisible because we lack the categories to observe them and place them on our maps. Throughout the pages of the book we encounter inhabited forests and meet the communities that manage them. Authors such as Brondizio, Siqueira, and Vogt, cite Browder and Godfrey to describe the diffuse urbanisms of the Amazon, or echo Brazilian geographer Bertha Becker's description of the basin as an urban forest –a completely unexpected turn to the image of the jungle as pristine, untouched sancturary. We also encounter the

peri-urban: a zone that is neither city nor hinterland, but both. An urbanized hinterland or an agriculturalized city.

The authors´ call for redefinitions is not an exclusively ontological or epistemological pursuit. It is, more than anything else, a preoccupation with the ways in which we relate to nature depending on how we define it and on the stories we tell ourselves about the places in which we live. The way we think about nature is bound to reshape the environment in significant ways. This collection of essays is full of examples that construct a narrative of symbiosis between the human species and its environment. Erickson, through the lens of ecological history, leads us through the complex transformations enacted by ancient, prehistoric cultures in the Amazon river basin. Their actions, far from having depleted the forest, contributed to their bounty through careful management and stewardship of its mineral, vegetal and animal resources. Managing their environment included the construction of extremely productive and successful "green infrastructural" systems or land forms such as fish weirs, raised fields, mounds, forest islands, agroforestry, communication networks and fertile soils known as dark or brown earths. This managed landscape was able to support large and complex populations which were organized, in the upper Xingu for example, into what Hackenberger describes as urban constellations or ´galactic´ clusters with a fractal, networked structure that weaved reciprocal communities across a forested and highly productive landscape. The Maya had deployed similar land shaping strategies and agro-forestal or silvicultural systems, and their long-lasting impact in the forests of Meso-America can still be measured today (Lentz and Lane, 2014, 173-189). Fairhead and Leach lead us through the forest islands of Kissidougou, which are not the remnants of a former rain forest that receded under the pressure of an expanding savanna, but the forested orchards that were cultivated by settlers in the midst of a pre-existing savanna. We learn about the deciduous forests of the Western Ghat region of Southern India (Morrison and Lycett, 2014, 153), and their millenary cultivation. One of the strongest cases for the anthropogenic or anthropic character of many forests comes from the European Union´s institutional framework. The latter acknowledges the role of human populations in the construction of the European landscapes and assigns a positive value to their participation in managing them, through agro-forestry systems such as the Spanish *dehesas*. Their presence, it has been proven, correlates to higher rates of biodiversity in the region. If in Europe human participation in the construction of forests is so evident and positive, why isn´t it in the tropics? A different ontology, the book would argue, prevents Western minds from understanding the cultural patters of rain forests, patterns that for indigenous cultures are evident and legible. Legislation in the tropics needs to respond to a different forest ontology, its own.

The dominant neo-Malthusian narrative of forest destruction, common in the conservation literature, has not been viewed negatively throughout history. As Albritton argues based on a historical and contextual analysis of The Wealth of Nations, Adam Smith equated deforestation to a civilizing movement, a necessary stage in an evolutionary and linear pathway towards material wellbeing and progress (Albritton Jonsson, 2014, 53). Forests have also often been viewed as ideal abodes for the illicit and the insurgent, an entanglement that defies the panoptic view of the state (in the Foucaultian sense) and has to be eliminated. Policing and controlling them demanded substituting their complex tangle with legible agricultural and urban patterns or clearings. Nation states during the Cold War supported colonization programs geared towards achieving deforestation and deploying counter-insurgency tactics (Lee Peluso & Vandergeest, 2014). Furthermore, in Latin America the Agricultural and Colonization Reforms equated claim over lands with full deforestation and substitution (alternative, multi-functional agricultural practices did not count as agriculture and would not render the land claimable). Nation states inherited many of their policing practices from colonial regimes, whose construction of forests as uninhabited or empty served imperial interests over resources well. Bryant, in his discussion of teak control in Burma, exemplifies how property rights were used to guarantee control of commodities

coveted by colonial metropolises. Reij illustrates how indirect rule was re-enacted by nation states in the Sahel in order to guarantee control over customarily collective resources. Unfortunately, many of these control practices have been assimilated by conservation policies today, which are often viewed by forest dwellers as elitist and failing or unwilling to acknowledge the participation of communities. These policies often exclude or evict local communities from an environment they have historically contributed to construct. Fairhead and Leach clearly demonstrate how the degradation narrative preferred by the conservation movement was used in Kissidougou to justify removing the villager´s ´control of resources in favor of the state." (Fairhead & Leach, 2014, 18) Not only conservation has enclosed forests to the exclusion of its dwellers. Extraction enterprises and agri-business have also played an important role in this direction.

The Social Lives of Forests proposes to supersede the narrative of destruction, not out of whim or a false optimism in the human project, but based on empirical trends that are measurable on the ground and clearly show a pattern of forest transition. Why are forests resurging in the tropics? The answers are not straightforward and different authors advance different hypotheses. The book, in a way, is composed like a puzzle that places critical pieces together so that the reader can get a better picture of why forests are resurging. Hecht´s research in El Salvador was one of the earliest to challenge the narration of destruction by demonstrating widespread resurgence of forests through comparative analysis of satellite imagery in time. Her work does not imply that human activities are exempt of having a negative effect on biodiversity and rate of forest regeneration. It simply attempts to make visible a tangible process that is rendered invisible by our focus on "empty –read humanless- natural forests" to be conserved as valuable, and underwrite everything else as unworthy of vision.

What becomes clear is that forest resurgence is not merely the result of abandonment of agriculture or pasture, as has been extensively assumed. Other forces are in place. One of them is urbanization. Cities in the tropics are growing and the rural-urban migration feeding them is not being triggered by the magnets of industrialization in a process analogous to XIX Century England or the United States (Davis, 2014). The political economy of most developing countries in the Tropics is still export-oriented and its bulk relies on very few resources demanded by the metropolitan markets of developing nations. If it is not industry nor the labor it generates, what else could be attracting so many rural dwellers and farmers to the cities in the tropics? The answers are manifold. It can be inferred from the collection of essays that the informal cities exploded in the nineties (in a second wave that was fiercer than the first, during the post-war years) partially as a result of the Structural Adjustment Program enforced by the IMF, the World Bank and other multi-lateral agencies as a pre-condition to access credit for development. One of the key policies of this program was to reduce public spending. Governments throughout the global south decreased investment in public health, public education, and infrastructure. The areas that suffered most from this disinvestment were the rural areas. Urban areas became magnets because they still would –or would be expected to- offer public services (health, education, infrastructure and basic services). Rural dwellers strategically responded to structural changes through a threefold strategy: household income diversification, multi-sitedness and circular migration (Padoch, Stweard, Pinedo-Vasquez, 2014; Putzel and Ruiz, 2014, 324). Multi-sited households are composed of extended families who keep a base -the home of some and shifting members of a kinship- in different strategic places: in a forest and/or small agricultural holding, in a regional or national city, and, ideally, also abroad, in a developing nation. This spreading of the family allows it to access resources from different economies. Remittances flow to the households in the cities of developing nations from external economies and from regional hinterlands, where the key sources of economic means tend to be located: in mining and extraction of diverse raw materials, in agri-business enterprises, in forest harvesting and extraction (logging, fishing, acai harvesting, etc.), and in infrastructure construction (particularly in lieu of the

deployment of IIRSA/COSIPLAN continental infrastructures and bi-oceanic corridors since the year 2000). Remittance patterns show a strong correlation with forest resurgence (Hecht, 108) and urbanization. These ideas indirectly challenge the notion that cities in the tropics are attractors of people because they offer jobs. The large mantels of self-built areas in the developing world thrive thanks to livelihood strategies that drastically differ from the rural-urban pathways of the north. New city residents often thrive in the city thanks to the resources that are harvested in forests, hinterlands and farming areas; through remittances, and/or casual, opportunistic informal labor in the city. Rarely do they rely on formal, stable jobs.

The implications of this form of urbanization for tropical forests are twofold: on the one hand, they can resurge in areas that have been abandoned through retreat; on the other, they resurge through purposeful management by communities who understand the value assigned to forest products in the urban national and international markets. An excellent example of this mechanism is illustrated by Sears and Pinedo-Vasquez's analysis of Pucallpa and the relationship between this Amazonian city and its forested hinterlands. Most of the families in this largely (70%) informal city have members of their household working in the forest as loggers, or through a conscious decision, practicing secondary forest management, and providing through their enterprises a significant income that contributes to the urban household (Sears and Pinedo-Vasquez, 2014, 336). Brondizio, Siqueira and Vogt, on the other hand, illuminate the process by which a forest based economy is becoming competitive compared to annual agriculture or cattle ranching, by explaining how forest products such as acaí in the Amazon estuary provide incentives for forest stewardship, expansion and management. A similar case of local forest management and resurgence through a response to global market demands is portrayed by the shea-nut economy in the Sahel in general, and Niger in particular (Menzies, 2014). These and other case studies show how urbanites in tropical informal cities profit from their economic bases in rural non-farm work, and reverse the flows of income from hinterlands –the main source of labor and resources- to cities, which provide the services, infrastructure, informal jobs and, in some cases, formal and stable employment (Brondizio, Siqueira and Vogt, 2014). Flows of information and knowledge also play a key role in this multi-scalar and multi-sited productive household networks. As a whole, the research presented in this book challenges theories of forest succession based on European and North American models and experiences, and establish the importance of not extrapolating causalities that respond to different environmental and economic circumstances from global north to global south, a pattern that presupposes the inevitability of a linear, evolutionary pathway of "development." The forest transition model was driven in temperate areas by the industrialization of rural areas. By intensifying agriculture (equal production in less area that creates a surplus population for rural-urban migration), land was liberated for forest resurgence.

The global capitalist market is another important factor in the resurgence of tropical forests. Beyond dualisms, the global market can play against or in favor of the forest. The role of still emerging "green," "environmental," and "health food/medicinal" markets cannot be underestimated. Ecosystem services are being practically valued throughout the world, and this trend is probably bound to augment. Niche markets, like the ones that demand açaí from the Amazonian estuary (Brondizio, Siqueira and Vogt, 2014, 348), shea-butter from the Sahel (xxxxxxx , 2014,), or forest tea from Southern China (xxxxxxx , 2014,) are contributing to regenerate the forest and improve the lives of families and ethnic minorities. The renewed use of *zai* holes in Niger, a traditional method of tree stewardship used in the Sahel, is revealing of this trend. Reij, Carney and Elyas clearly portray the ways in which women protect productive trees and their surroundings, by expanding *zai* holes (small pits) next to shea-butter nut trees, and filling them with manure (traditionally they were smaller and filled with water). This method has allowed them to regenerate and expand forest systems that are economically beneficial to their

households. Bryant, on the other hand, points to the role played by branding and marketing in the expansion of green, environmental and organic markets in his discussion of the teak market in Burma since colonial times. Hecht notes that the places of retirement market, propelled by pension and state payments in the developed world, creates enclaves that stimulate the above described processes. The same can be said of environmental enclaves, academic forest laboratories included. This beneficial pattern is in direct opposition to the less desirable pattern of expansion of industrial monoculture, such as rubber plantations in the Golden Triangle, the border between China, Laos and Thailand (Brondizio, Siqueira and Vogt, 2014, 348; Menzies, 2014; Carney and Elyas, 2014) or soy-bean monoculture in South America. Hecht argues that the "decline in forests enhances demand for marketable forest goods." (Hecht, 2014, 104) This market law may further contribute towards accentuating the trend towards forest resurgence.

Public policies also play an important role in forest resurgence, as much as they can in deforestation. Definitions of property and property rights, indigenous rights to property, shift of tenure rights from state to communities, rights of access and use, access to credit, mapping methods, conservation management policies, water and resource management, environmental service programs, promotion of agroforestry, infrastructure deployment, allocation of subsidies, concessions, export-led development policies… All can have an effect, whether positive or negative, on forest ecologies and their communities. Menzies clearly shows how transferring tree property from state to individuals in Niger contributed towards forest resurgence and expansion of forest islands (Menzies, 2014). The analysis of the China, Laos and Thailand frontier undertaken by Fox is interesting in many ways. By comparing what happens to a relatively homogeneous landscape five decades after the enactment of differential land use policies and institutional incentives, he shows how China was able to accept multi-functional agro-forestry, after decades of enforcing rubber mono-culture, and how Thailand successfully avoided relying on a single commodity, or how its emphasis on the tourism industry has favored the delineation and preservation of set asides, often at the exclusion of traditional peoples (Fox, 2014, 259). In Latin America, claiming land through deforestation has been the norm. On the contrary, in South East Asia, planting trees has become a means of encroaching on common lands and privatizing them (Hecht, 105). Barry and Meinzen-Dick call for participatory mapping not only of land use but rather of what they refer to as "Land Tenure Rights." Participatory land use mapping can often work against the communities it seeks to aid, as stark definitions of rural, forest, or property, need to translate into sharply defined and discrete surfaces on the territory. In the Amazon, "the empty pasture is an ecological story of soil nutrient decline," declares Hecht, "but it is also an institutional one: land claiming, money laundering, institutional rents, or for many small-holdings, a strategy of economic diversification." (Hecht, 2014, 104)

The most productive take-away of the book for those, who like me, are interested in landscape architecture and sustainable urban planning and design, can be summarized as what Perfecto and Vandermeer call the "agro-ecological matrix." Scientists have demonstrated that an ecological matrix that facilitates interconnectivity between ecological fragments is critical to the survival of species. One does not need to look far to find agro-ecological practices. These hybrids of local and exogenous agro-sciences, recuperate autonomous, often ancestral practices of resource management that have been practiced since time immemorial throughout the world. As local and indigenous practices of agro-ecology are recovered, the meaning of development and progress changes. Interesting proposals emerge, such as the concept of "poverty alleviation through forestry programs" advanced by Sears and Pinedo-Vasquez, a pathway that provides the "possibility to reconcile the apparent dichotomy of ensuring the conservation of forest ecosystems and improving livelihoods of forest-dependent people." (Sears and Pinedo-Vasquez, 2014, 336) Or the Brazilian notion of "extractive reserve," critical for the

survival of a forest that must be productive if it is to meet the double goal of providing livelihoods for the millions of human beings who directly depend on it, and to contribute towards the preservation of environmental and ecological services, and biodiversity. Policies geared towards providing incentives for rewooded agro-ecologial matrixes (versus monoculture agri-business) would stimulate further forest resurgence. Vandermeer and Perfecto call for an understanding of patchwork of forest fragments in a matrix of agriculture, and to focus on the latter, as improvements in matrix quality can improve the environment overall. Another positive outcome of this shift would be to emancipate developing nations from the boom and bust of the few export commodities on which the whole of their economy relies, and move towards a more productive, sovereign mindset. I would like to conclude quoting Hecht, who synthesizes the ultimate intention of the book when she writes: “A model of rural development that embraces ecological as well as social complexity within a matrix framework will, in the end, serve conservation and development purposes far better than a model of an imagined wild on one side and industrial agriculture on the other.” (Hecht, 2014, 13)

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	Conceptual Frameworks	Historical Ecologies	Market dynamics	Institutions	The Urban Matrix
Forest ideologies and their role in shaping tropical landscapes. Resurgence (versus destruction of forests)	Hecht: Catastrophic narratives of deforestation and land degradation do not correspond to research-based evidence of forest resurgence. Socio-natures. Different epistemologies about nature, politics, and development.	Rangarajan: Differential values assigned to nature/ Charismatic megafauna. (190) Definition and control of forests. Divide between nature´s preservation and rights of access to/use of forest resources (191). Erickson: Amazonia as wilderness, a myth. Amazonia is a cultural landscape (from the perspective of historical ecology).	Green and environmental services, ecosystems services are starting to be acknowledged for their immense economic value: Pollination, wildlife habitat, micro-environmental cooling, soil moisture retention, CO2 sink, O production, heat absorption, etc.	Hecht: Heterogeneous property, collective use.	"Empty" wilderness of the Amazon was densely settled in prehistoric times. Heckenberger: "Long-term in situ cultural development of Xinguano peoples over more than 1,000 years is clearly documented by continuity in (1) utilitarian ceramics used to process and cook staple foods; (2) settlement placement (at forest/wetland transitions) and local land use, marked by substantial forest and wetland alterations; and (3) settlement form, notably circular plazas with radial roads.(315) Sears & Pinedo-Vasquez "Transition from open land to secondary forest cover. In some cases this results from the abandonment of agriculture or pasture, but also to the decision by rural smallholders to practice secondary forest management." (336) Other reasons: Decision by rural smallholders to practice secondary forest management. Hecht, El Salvador: The role of remittances in forest resurgence (reduction in land use). Role of communications and access to education, media, commerce of imported goods and their marketing strategies and discourses, branding, etc.
Human agency in the construction of forests / Forests as anthropogenic landscapes	Fairhead & Leach: Forest Islands of Kissidougou, not relics of the past but encouraged and managed by local villagers. Neumann:	Morrison & Lycett: Dry deciduous forests of the interior [of the Western Ghat region of Southern India] developed in concert with human land use for more than 70,000 years, with the last 5,000 years			Heckenberger: Upper Xingu – "largest contiguous tract of tropical forest still under indigenous resource management." (315) "The integrated settlement configuration was in place by circa 1250 to 1400 A.D. […] Major curbed roads (10 to 50 m wide) articulate with plazas, ditches, and

	Questions Europe's exceptionalism in its acknowledgement of European landscapes as anthropogenic and dependent on human management. Hecht: Resilience, anthropogenic and biotic construction of forests, local and past forest management/knowledge systems, environmental politics and services, historical basis for claiming land. Chazdon, Vilchez Alvarado, Letcher, Wendt & Uzay Sezen: Archaeological research of Maya landscape management and overexploitation as basis for recommendation of policies, such as granting incentives to ranchers and farmers to retain remnant trees in pastures, and creating buffer zones.	seeing the most significant human impact (153). Lentz & Lane: "Past forest influences of the ancient Maya can be observed in the forests of today [vicinity of Dos Hombres, Petén region, Belize]." (173) "Of the individual trees found at Dos Hombres, a higher percentage (36.4%) was recognized to be of economic value to the ancient Maya." (179) "One possible interpretation of this observation is that the Maya were practicing some kind of agroforestry or arboriculture [...] to optimize the presence of economic species." (182) Their findings "support the concept that human activities, especially in areas of intensive occupation over long periods of time, tend to lower alpha diversity of surrounding habitats." (188) Erickson: Historical ecology. Indigenous knowledge and resource creation/management in Amazonia –diversity, distribution, and availability of species. (199) "Archaeologists have demonstrated that prior to the arrival of Europeans, much of Amazonia was			partition space within villages and across the broader landscape, notably linking settlements into 'galactic' clusters across the region." (316) Fractal geometry of multi-nodal, multi-centric clusters of settlements. Low densities of individual nodes that add up to higher cluster densities. This is an urban world that is being discovered thanks to Landsat and digital technologies of television. Brondizio, Siqueira & Vogt: "In recent decades, [a] coupled process of urbanization and forest resurgence [has been] taking place in the Amazon estuary. Since the mid-1970s, urbanization and a forest-based economy have emerged side by side, set in motion by regional, national, and global demographic and economic forces." (348)

		occupied by dense populations practicing intensive agriculture and urbanized societies that significantly contributed to creating the environment that is appreciated today." (200)			
Human agency in the destruction of forests		Rangarajan: Industry, hydropower and mining made major roads into the forests of India (195).			
Warfare and forests	Lee Peluso & Vandergeest: Insurgency, counterinsurgency and Cold War in tropical forests. Masco: Highly-contaminated nuclear waste sites in the US transformed into symbolic "wildernesses"				Insurgent groups in the forests of Central and South America during the Cold War (and still today).
Political economy and forests / Globalization, the global market economy and forests	Albritton Jonsson: Adam Smith and "his account of deforestation as a civilizing movement." (53)	Morrison & Lycett: From hunter-gatherers to hunter-gatherers of commodities.	Bryant: Branding nature, marketing and teak as functional product and status symbol. Implications for Burma. Carney & Elias: "Since the 1990s shea agroforestry systems are benefiting from new markets for the nut butter, which is made exclusively by women. […] Females butter makers influence the selection of trees and the management of the shea agroforestry system. […] West Africa exports an estimated 150,000 tons of shea nuts annually. (231)	Berry: Land and place of traditional authority in Kumasi, Ghana. Chiefs and de facto land allocation. Chiefly influence has benefitted from neoliberal policies: registering land, privatizing government assets and services, decentralizing governance and power. Calls for grassroots participation. Striking replay of the law of indirect rule. (283) Debate around customary laws.	Padoch et. Al. "Demographic exchanges between rural and urban areas have often occurred in the contexts of regional economic booms and busts." (328) Sears and Pinedo-Vasquez Relationships between log extraction, timber production and urbanization in the Peruvian Amazon. Brondizio, Siqueira & Vogt: "Increasing market demand for forest products created by urban areas in the region and elsewhere and accentuate by decreasing economic return from competing land uses for annual agriculture and cattle ranching. The region [Amazon estuary] has seen a forest transition and the emergence of a forest-based economy." (349)

			Nutritional, economic, ecological and medicinal values of species that also have international market value contribute towards forest resurgence. (233) Menzies: Rise of green markets and niche markets. "The same attributes that had made forest tea production 'backward' now make it 'authentic' and 'far above the usual quality.'" (248) "A land use that was formerly ignored or dismissed as backward [forest tea production] has been recast as a sustainable, indigenous technology for the production of a marketable niche product. The growers of forest tea, most of whom are from ethnic minority communities, are challenging established categories of modern and advanced (mono-culture rubber plantations) in the discourse of development in China. (240) Fujita Lagerqvist: Laos "is rapidly moving away from subsistence to market-based agricultural production system." (260) Cash crops (sugar cane, maize, cassava, rubber). This drives patterns of land-use change.	"In 1984, Ghana signed on to its first Structural Adjustment Loan, agreeing to relax state controls on domestic and foreign transactions in exchange for financial assistance from the WB and the IMF. Output and income recovered, but the gains were concentrated in Ghana's traditional export sectors –cocoa, timber, and gold- accelerating the pace of natural resource depletion and creating new problems for resource users and regulators alike." (288) Most concessions went to large timber companies. Later shift: farmers´ approval before providing concessions. Expanded grower's access to credit. Large scale plantations, private concessionaries. Frontier expansion, export-led growth, and indirect rule. "Recent efforts to rehabilitate Ghana's forests by privatizing them run the risk of increasing opportunities for rent-seeking and social exclusion, at the expense of equitable access and sustainable management." (290) Reij:	Açaí and forest resurgence. Boom of the fruit since the 1970s. "Interplay between a globalizing economy and colonial social structures of land ownership and access to markets." (353) Wide participation of families in the açaí economy. Shortcomings: "The lack of transformation industries adding value locally and offering a tax and employment base for municipalities where the product is produced has limited its contributions to improve economic development in the region." (354) Role played by deployment of infrastructure Communication flows between members of families located in global north, cities in the global south, rural areas and forests in the global south. Important inter-scalar networks. An expression of multi-sited households that Brondizio et. Al. emphasize.

				Regreening of the Sahel, forest recovery, in Niger, even in the absence of significant government or foreign aid (contrast with Nigeria). Use of traditional zai holes or planting pits. Enlarged them and filled them with manure. Stewardship of productive trees. "Re-greening has led to more complex and more productive farming systems, improved household food security, changes in local climate, increased drought resilience, local increases in biodiversity, improved soil fertility management, and a reduction in time women need for the collection of firewood." (305) On-farm agroforestry mosaics. Successful low-cost, grassroots strategy.	
Issues related to classification, definition and measurement of forests.	Grainger: The role of new technologies in the provision of evidence for reforestation, afforestation and forest resurgence (map comparisons in time ranges). Vandermeer & Perfecto: Call for an understanding of patchwork of forest fragments in a matrix of agriculture that characterizes tropical landscapes today. An				Notions of urban and rural also fail to explain current realities and relationships. Hecht. Padoch, et. Al. Timber products treated as agricultural products. Need to reclassify timber in this cases, in order not to criminalize small farmers for legitimate extraction. Sears & Pinedo-Vasqeuz (347) Brondizio, Siqueira & Vogt "Forest and city are one and the same for most towns around the Amazon estuary." (355)

	improvement in matrix quality can restore landscape. Agro-ecological matrix as desirable alternative to agri-business based on models of dependency that threat food sovereignty.				
Colonialism, Imperialism, the Nation State, and the control of forest resources		Morrison & Lycett: "The wealth of South India's tropical and semi-tropical forests, chiefly in the form of spices, resins, dyes, and other nontimber forest products, fueled imperial and colonial expansion in South East Asia and beyond." (156)	Bryant: British Empire control of teak.		
Break away from evolutionary, linear, understandings of forest development		Janowsky, Barton & Jones: "Complex and multidirectional trajectories of change [in the Kelabit Highlands of Malaysia], rather than linear or evolutionary trajectories moving from a hunting and gathering way of life to an agricultural way of life." (167)			
Social structure and forests		Rangarajan: "Exclusion remains more widespread than eviction in Indian forests. […] Preservation can also align with dominant landed castes and service elites in towns and villages. [Nomadic tribal groups] are not always ecologically benign, but threats to the vegetal complex from beyond park boundaries			The role of migration. Like Hecht, Padoch, Steward, Pinedo-Vasquez, Putzel and Miranda Ruiz question the applicability of forest transition theories that emerged in response to urbanization in XIX Century industrial nations like England and the US. "Researchers have shown that despite sizeable urban growth and rapid rural-urban migration, rural areas in the humid tropics are far from empty and fields and pastures are rarely abandoned to regrow

		can be far more intense than those within." (197) Conservation and repression.			into unmanaged and unused forests. In some cases, rural emigrants are merely replaced by new immigrant farmers, in others by industrial-scale agricultural enterprises." (322) "Many Pucallpa households, though residents of the city, rely on rural-based employment, notably logging and other timbering activities, rather than on city-based jobs to support themselves and their families." (323) Rural non-farm work → 80 percent of total household income + smallholders cannot survive form agriculture alone any longer. "Newly urban and peri-urban residents, create and cultivate farms, pastures, or orchards located in urban or more frequently peri-urban forms." (325) Many also turn to "fishing in regional lakes and rivers for household consumption and sale, or raise small livestock in city gardens or peri-urban sites." (325)
Public policies and forests			Fox: Differential land use policies in Golden Triangle (where China, Laos and Thailand share a mountainous border and share new highway corridor). Incentives. "In the early 1950s tree cover across this transect was fairly homogeneous. Over the past six decades, however, natural resource management policies in the three countries have differed significantly. This is apparent in terms of policies related to conservation,	Hecht: "If agrarian reform galvanized rural politics in the twentieth century, forest tenurial reform may well be the axis of rural politics in the twenty-first." Barry & Meinzen-Dick Resources and resource histories should be incorporated into tenurial/institutional structures. Barry & Meinzen-Dick: "Over the last twenty years, a little-known trend of land tenure reforms has swept across the world's	Padoch, Steward, Pinedo-Vasquez, Putzel & Ruiz: In many countries, structural adjustment program policies such as decentralization and decreased government spending (loss of agricultural subsidies) coincided with market changes and the incorporation of agricultural markets and smallholders into global trade networks. Double-edge sword (see p. 324) In urban areas, household income diversification and multi-sitedness or "dispersion of household members among urban and rural homes, combined often with circular migration. […] City and rural members may, and often do, switch places of residence and of employment."

			watershed management, and the promotion of agroforestry crops." Thailand and Laos have segregated agriculture from forested landscape. China more willing to accept multifunctional agroforestry landscapes. Thailand has been successful at not relying on a single commodity. Industry of tourism has emphasized set-asides, conservation and exclusion of traditional peoples. (259)	forests. In what has been classified as between 79% and 84% public property under the formal ownership of the state, we are now witnessing an official transfer of tenure rights to communities living in more than 250 million hectares of forestlands. […] By 2001, 22 % of all forests were owned or held in reserve for communities." (291) Reij: Critical policy in the re-greening of Niger: Shift in rights to trees from state-owned to private ownership (307).	"Millions of urban residents rely not only on urban-derived earnings, but also on rural resource management and natural resource extraction." (324) "Ruralization of urban household incomes." (325) "In a significant and probably growing percentage of cases, the urban poor fail to find remunerative employment in regional cities and rural relatives or peri-urban gardens cannot satisfy urban needs. This situation leads to yet a third distinct urban-rural configuration of residence and employment, one that appears to reverse not only the usual patterns of labor migration, but of income flows as well. Unemployed urban household members frequently leave for rural areas where they work for wages, and remittances flow from work done in the countryside to the city. Informal employment in forestry and mining feeds significant numbers of urban families, especially the newly urban; most frequently these activities are carried out far from the city, often in remote areas." (326) Infrastructure construction also plays a role… It seems that these types of policies may have had an indirect effect. By reducing investment in government spending through the reduction of public health, public education and infrastructural services in the rural areas, the incentives to move to urban areas, where there was more continued investment in these areas, were high. This hypothesis would have to be measure and tested. Sears & Pinedo-Vasquez:

					Forest based poverty alleviation AGROECOLOGY → possibility to "reconcile the apparent dichotomy of ensuring the conservation of forest ecosystems and improving livelihoods of forest-dependent people." (Sears & Pinedo-Vasquez, 336) Sustainable forest management, biodiversity conservation, and poverty alleviation: integrated with production goals. (345) Recommended policies: 1. Secure land and resource rights 2. Viable production technology and all necessary inputs must be available, including credit. 3. Farmers must have confidence that they can protect trees until maturity 4. Market demand and market structure in which small producers are permitted to participate. (344)
Mapping and policy				Barry & Meinzen-Dick: Emergence and growth of participatory community land-use mapping. Production of land-use maps "as the basis for establishing external boundaries or perimeters and then deployed as an integral part of a legal procedure for acquiring land rights or tenure mapping." (292) Possibility of integrating de facto, customary, or ancestral rights. "Quandary of imposing a rigid system of spatial data onto the fluid boundaries of operating tenure systems." (295)	

				Often “locals who insist on maintaining previous resource use patterns are rendered illegal.” (295) Criminalization of legitimate practices. Representation of the collective, central issue. Proposal: use of Tenure Rights Mapping (not merely overlapping land-use mapping, which is later reduced by categories that do not tolerate overlaps).	