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SPECIAL FEATURE: CASE REPORT

The EJAtlas: Ecological Distribution Conflicts as Forces for Sustainability

# Sri Lanka: a political ecology of socio-environmental conflicts and development projects

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**Abstract**
By analyzing 26 cases in the EJ Atlas for Sri Lanka, their causes, the impacts, the social actors involved, the forms of mobilization, and the main outcomes of the conflicts, this article examines in what ways activities aiming at economic growth produce socio-environmental conflicts. Such activities increase the social metabolism causing changes that translate into environmental, social, and health impacts which due to inequality of power are unequally distributed. As a result, those who are negatively impacted sometimes mobilize claiming environmental justice. The mining of construction materials to support the boom in the building sector and the expansion of intensive plantations into 'extraction frontiers' in new territories, cause deforestation, biodiversity loss, and hurt the local communities. Tourism and industries and new infrastructures are causing displacement, pollution, land degradation, and water shortage, affecting communities of farmers and fishermen that mobilize against the adverse impacts. Those with power to appropriate the natural resources are mostly the state together with international finance institutions and international actors who are able to implement the construction of infrastructures, plantations, and mass tourism. Mobilizations are mostly geared to the protection of livelihoods threatened by loss of access to land, pollution, deforestation, diseases, water scarcity, and new uncertain risks. The protection of the environment demanded by the mobilized groups in Sri Lanka does not aim just to protect nature itself but belongs to a wider movement of an "environmentalism of the poor".

**Keywords** Sri Lanka · EJ Atlas · Environmental justice · Socio-environmental conflicts · Environmentalism of the poor · Internal colonialism

## Introduction

In Sri Lanka, the national development policy put in place by the government, since the end of the civil war aims to achieve economic growth through the development of infrastructures, intensive plantations, and the improvement and growth of the tourism and energy sectors (Ministry of Finance and Planning and Department of National Planning 2006). The program led the GDP growth rate to increase (World Bank 2017), but on the other hand, it is causing a number of conflicts between the promoters of these policies (the state and the private sector) and the local communities impacted by their negative effects. This is a common pattern in many other territories (Martinez-Alier et al. 2010, 2016a; Pérez-Rincón et al. 2017; Teran Mantovani 2017), where the inputs of materials and energy into socio-economic systems and the corresponding outflows of wastes and emissions, have been growing enormously (Krausmann et al. 2009; Sachs and Santarius 2007), although not uniformly around the world. As a result, we observe an increase in ecological distribution conflicts (Martinez-Alier et al. 2016a) at the 'commodity frontiers' (Moore 2000). Tea plantations (as in the colonial history of Sri Lanka), intensive monocultures for biodiesel, offshore platforms for oil extraction, and new metal mines are examples of commodity frontiers (Muradian et al. 2012) and their expansion implies heavy social and environmental costs. Political ecologists point out that economic and ecological change largely occurs for the benefit of some groups and to the expense of others and that the

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costs and benefits of such changes are unequally distributed according to social, political, and economic differences (Bryant and Bailey 1997; Hornborg 2009; Robbins 2011). In such inequalities, political power plays a predominant role (Martinez-Alier 2002).

The theory of ecologically unequal exchange highlights this unequal distribution. It argues that industrial countries externalize their environmental costs to less developed countries, thereby increasing environmental degradation within them (Hornborg 1998). The industrial development and its maintenance require a continuous input of materials and energy, which result in unequal exchanges between industrial centres (cores) and national or global extractive sectors (peripheries). This framework explains the unequal distribution of environmental problems as the result of two key components. First, the cores appropriate energy and materials from the peripheries. Second, the externalities of the process are displaced back to the peripheries (Hornborg 2009). Cores and their peripheries can be two neighborhoods within the same city, two regions in a single country, or industrialized countries and so-called developing countries.

Socio-environmental conflicts or, equivalently, ecological distribution conflicts (Martinez-Alier 1995, Martinez-Alier and O'Connor 1996) arise in this context and lead to mobilizations against specific economic activities because of concerns for the current or future negative environmental impacts. Such conflicts are a response to threatened livelihoods, where social movements offer resistance all along the commodity chains, including the extraction phase (biomass, mines, and quarries), transport and infrastructures (oil spills, pipelines, airports, motorways, harbors and dams), processing (industrial pollution), and final disposal in landfills or incinerators (Muradian et al. 2012). Such conflicts have similar traits all over the world, but they are influenced by local geographical, economic, social, and political factors (Muradian et al. 2012; Martinez-Alier et al. 2016b), as we shall see for the case of Sri Lanka.

Several authors have used 'environmentalism of the poor' as a framework to explain such conflicts (Martinez-Alier 2002; Escobar 2006; Nixon 2011). The concept was used by Guha and Martinez-Alier (1997) in opposition to 'the cult of wildernesses' and 'the gospel of eco-efficiency'. The former refers to the defense of the environment as pristine nature without focusing on a broader socio-economic and cultural context. The latter, denotes environmentalism related to 'ecological modernization' without considering the inevitable environmental and health impacts of industrialization (Martinez-Alier 2002). By contrast, 'environmentalism of the poor' refers to the actions of local communities and their social movements protecting the environment as a source and prerequisite for livelihoods. It might occur (as in some cases in Sri Lanka) that in a given environmental conflict some social actors express a concern for human livelihoods, others defend conservation of endangered species, and still others declare that a piece of nature is sacred. Recent analyses (Anguelovski and Martínez-Alier 2014, Sikor and Newell 2014; Martinez-Alier et al. 2016b) connect the environmentalism of the poor, mostly focused on conflicts in the South, with the movement for environmental justice born in the United States in the 1980s (Bullard 2002). "Environmental justice" (EJ) provides a lens through which to read the struggles over environment and natural resources worldwide (Sikor and Newell 2014, p. 151). From this point of view, tribal and peasant communities resisting land dispossession or urban communities fighting polluting industries are all protagonists of conflicts appealing to environmental justice. They include contested distributions of the costs and benefits of environmental change, but they also often embrace notions of justice based on participation in decision making and recognition of different identities, world views, and understandings of development.

This article contributes to the study of environmental injustices in Sri Lanka by analyzing a set of environmental conflict cases compiled mostly by the author and uploaded in the EJAtlas. It asks in what ways do economic activities explicitly or implicitly implemented for the purpose of economic growth create socio-environmental conflicts. To address this question the article analyzes what are the economic activities driving the conflicts and the actors taking part in them, and why, who and in what ways different groups of people mobilize against the investment projects.

In Sri Lanka, some authors have focused on single case studies of political ecology (Mahees 2010; Bohle and Funfgeld 2007), while this article is an attempt to review an inventory of conflicts, seeking to identify common patterns and distinctive elements.

## Materials and methods

This paper is the product of a collaboration between a young European academic with knowledge of political ecology and an experienced Sri Lankan activist involved with the Centre for Environmental Justice (CEJ) in Colombo. Over the course of 6 months, we established regular communications and the draft descriptions of cases were compiled at the ICTA-UAB after CEJ suggested those most relevant in the country. Second, further materials regarding such conflicts were collected from sources such as NGOs' reports, newspapers, blogs, government sources, company statements, and academic articles, cross-checking the information. Once completed, cases were reviewed for accuracy in Sri Lanka and then supervised by the editorial team of the EJAtlas. While most of the information has been acquired from and it is backed by documented sources, some of the presented results depend on the interpretation of the author.

This applies to the section in the data sheets uploaded in the EJAtlas regarding the success level in EJ. Here, to define whether EJ has been served or not (or "not sure") we used the definition of EJ by Schlosberg (2007) which includes distribution, participation, and capability. Grounded in the EJAtlas (which by January 2018 has reached 2340 cases worldwide), this work on Sri Lanka is then mostly based on 'activist knowledge' and 'grey literature'.

The article examines and compares 26 socio-environmental cases uploaded in open access on the EJAtlas by November 2016 that took place in Sri Lanka between the 1990s and 2016. Each database form focuses on the types of economic activities that caused conflicts, the main social actors involved, the social, health and environmental impacts of such activities, the claims and the forms of mobilization of the groups making such claims, and finally, the outcomes of the conflicts and whether EJ has been served. The database forms include also references to written materials, videos, and photographs. Table 1 contains the name of the conflicts, the type of conflict, and a brief summary of the cases to facilitate reading of the text.

## Background

With a 20 million people population, Sri Lanka has a fast growing economy (World Bank 2017) mainly due to the end of the civil war in 2009, increased agriculture production, the tourism sector and increasing government and donors spending in post-war and post-tsunami reconstruction and infrastructures development (UNDP 2017; Perera 2014). However, even if the poverty rate has significantly decreased, Sri Lanka remains a 'lower-middle income country', facing large disparities across regions and social groups (World Bank 2017; UNDP 2017; Wijerathna 2014).

Advised by International Finance Institutions (IFIs) in the 1980s, the Sri Lankan government implemented neo-liberal policies, encouraging foreign investments and establishing export processing zones. Over this period tourism, garment manufacturing and financial services displaced agricultural commodity exports as the core of government finances and foreign exchange (Venugopal 2015). However, plantations, especially tea, rubber, and rice, still play a vital role in the local economy, significantly contributing to the export income (Ministry of Finance 2016).

The market reforms transformed Sri Lanka along different axes. On one hand, the country was divided between the development processes that were taking place in the south and the catastrophic humanitarian situation of the north under the occupation of the LTTE (Sundarji 2015). On the other hand, even in the south, a large gap persists between the prosperity of the urban sectors and the poverty of the rural areas (Venugopal 2015). However, there was not a total shift from the State to the market under neoliberal policies. The market reform program coincided with an expansion of the State with large rural development schemes, such as the Mahaweli project[1] (Venugopal 2015). Such features are reflected in the cases analyzed.

During the post-war period, the Rajapakse government oriented its policies toward 'national development'. In practice, this has translated into large infrastructure projects, mainly in the south, and the militarization of the northern regions, which are territories traditionally owned by the Tamil minority (Nadarajah and Sentas 2013), although some development can be observed in the north as well (Sundarji 2015). The election manifesto *Mahinda Chintana* oriented the national policies from 2010 to the present. The main goal was to reach an 8% annual GDP growth, integrating 'the positive attributes of the market economic policies with the domestic aspirations by providing a necessary support to domestic enterprises and encouraging foreign investments' (Ministry of Finance and Planning and Department of National Planning 2006).

The two main features of such regime (Venugopal 2015) are the government's priority for the construction of large infrastructures such as airports, expressways, and ports (Central Bank of Sri Lanka 2015) leading to a deprioritization of smaller projects for poverty alleviation in the rural communities (Department of Census and Statistics 2006). Second, there is a significant shift away from Western donors and investors to non-Western, particularly China. On one hand, most of the Western donor countries who had been directly involved in the 2002–2005 peace process became critical of the Rajapakse government. On the other hand, the government itself viewed Western-funded aid projects as possible sources of subversion and subjected them to increasing control. Thus, China emerged as the government's favorite partner, with Chinese public sector companies implementing some of the most important projects such as the Katunayake expressway and the Hambatota Port (Venugopal 2015; Perera 2014).

Currently, within the industry sector a large share is taken by 'mining and quarrying' and the 'construction' sector. The extraction of stone, sand, and lime increased over the last years together with the production of cement (Ministry of National Policy and Economic Affairs 2015). First, this is related to the general intensification of infrastructures and to the development of the tourism industry that generates now a consistent part of Sri Lankan revenues. Within the real estate sector, over the period 2011–2014, Sri Lanka's hotel stock, measured as the

[1] A development program begun in the 1970s for irrigation facilities and the generation of electric power (Ministry of Mahaweli Development and Environment 2016).

**Table 1** List of cases. Source: EJ Atlas

| Num | Case name | I level | II level | Summary |
|---|---|---|---|---|
| 1 | Agrochemical pesticides and kidney related diseases | Biomass and Land Conflicts | Intensive food production, Agro-toxics | Sri Lanka farmers affected by kidney disease caused by the use of pesticide and fertilizers mobilize to ban the import and corporations reacted to halt the new law |
| 2 | Land grabbing by Army | | Land acquisition, Deforestation, Tourism facilities, Military installations | 150 families in Ragamwela and Shastrawela villages displaced by the army and 1220 acres of land confiscated |
| 3 | Land Grabbing in Nilgala forest | | Land acquisition, Deforestation, Intensive food production | Local communities and environmental associations mobilize highlighting and fighting forest destruction for economic activities |
| 4 | Rubber plantations in Weliya Forest | | Land acquisition, Deforestation, Plantation conflicts | 3000 acres have been illegally sold to rubber plantations, hurting local community and exacerbating conflict between humans and elephants |
| 5 | Silawathurei Cashew plantations | | Land acquisition, Deforestation, Intensive food production, Plantation conflicts | Land appropriation by army for plantations affecting local environment, already under pressure by human settlements of returnees from the civil war |
| 6 | Amarawewa Forest clearing for biofuel | | Deforestation, Agro-fuels and biomass energy plants | After the mobilization by local EJOs the Supreme Court stated to stop a Gliricidia plantation for bio-fuel production set in a National Park which was hurting the local environment |
| 7 | Labelling legislation for genetically modified food | | GMOsIntensive food production (monoculture and livestock) | Thanks to the engagement of several EJO's, Sri Lanka has regulated the labelling legislations for genetically modified food. However, public institutions fail to assure that food is either GM free or labelled |
| 8 | New seed law | | GMOs Biopiracy | Sri Lankan farmers on the streets fighting to preserve their traditional seeds |
| 9 | Norocholai Coal Power Station | Fossil Fuels and Climate Justice | Coal extraction and processing. Transport infrastructure networks | Mobilization against the first Coal Power Plant of the country completed in 2011 that is causing several environmental effects and is affecting the livelihoods of the population living in the surrounding area |

**Table 1** (continued)

| Num | Case name | I level | II level | Summary |
|---|---|---|---|---|
| 10 | High mercury levels in skin whitening cosmetics | Industrial and utilities | Other industries | High levels of Mercury have been found in skin whitening creams available in the Sri Lankan market. Local EJO's ask Health Authorities to ban these products |
| 11 | Holcim cement plant in Puttalam | | Building materials extraction. Pollution related to transport | Mobilization against a cement factory that threatens the of local population and burns hazardous and non-hazardous waste |
| 12 | Lead in enamel paint campaign | | Manufacturing activities, Chemical industries | Decorative paints with high lead levels are still being sold in Sri Lanka even after the legislation banned their commercialization |
| 13 | Rathupaswela water contamination | | Water treatment and access to sanitation. Landfills, toxic waste treatment, uncontrolled dump sites | Water contamination caused by a plastic gloves factory affected the right to water of the local community |
| 14 | Colombo-Matara highway | Infrastructure and Built Environment | Transport infrastructure networks, Land acquisition | Mobilization against the construction of a highway from multiple communities affected at various stages of project |
| 15 | Land grabbing in Wilpattu National Park | | Land acquisition, deforestation, tourism facilities | Wilpattu National Park is under threat of land grabbing for human settlements |
| 16 | Port City Project | | Land acquisition, Urban development, Ports, Tourism facilities, Building material extraction | Mobilization against Port City Project, an offshore city with luxury apartments and facilities |
| 17 | Stone quarry in Andarawewa forest reserve | Mineral Ores and Building Materials Extraction | Building materials extraction, Deforestation | Land grabbed for an illegal stone quarry in the Andarawewa Forest Reserve |
| 18 | Mechanized Sand Mining in the Maha Oya | | Building materials extraction | River sand mining in Maha Oya river for the increasing needs in construction materials |
| 19 | Nuclear energy program | Nuclear | Nuclear power plant | Mobilization against India and Sri Lanka cooperation agreement for the use of nuclear energy |
| 20 | Hotels in Andarawewa Forest Reserve | Tourism Recreation | Land acquisition conflicts, Deforestation, Tourism facilities | Land grabbing, pollution and corruption for a luxury 'eco-friendly' resort |
| 21 | Eco Golf Resort Project in Soragune Forest | | Tourism facilities, Deforestation, Land acquisition Transport infrastructure networks | Local EJOs mobilize against land grabbing and pollution for a luxury eco-golf resort |
| 22 | Sanitary landfill in Waga Pelpola | Waste Management | Landfills, toxic waste treatment, uncontrolled dump sites | Project to establish a sanitary landfill abandoned thanks to protests by local communities and EJOs |

**Table 1** (continued)

| Num | Case name | I level | II level | Summary |
|---|---|---|---|---|
| 23 | Bomuruella Mini Hydro Power Plant | Water Management | Dams and water distribution | The falls in the Seetha Eliya Forest Reserve are under threat for a small hydro plant |
| 24 | Mini hydropower project in Athwelthota waterfall | | Dams and water distribution | A Sri Lankan mini hydro power company owned by Dhammika Ranathunga, is planning to build a dam in Athwelthota waterfall located in Morapitiya- Athwelthota |
| 25 | Uma Oya river diversion and Mahaweli hydroplant | | Water access rights and entitlements, Dams and water distribution, Interbasin water transfers | Uma Oya Multi-Purpose Project aims to generate hydropower and water for industrial activities. However, it is affecting the right to water of the local communities |
| 26 | Koskulana Mini Hydro Power Plant | | Dams and water distribution conflicts | Due to cumulative impacts and repeated violation of environmental law local villagers and NGOs oppose the construction of a mini hydro power plant |

Elaboration by the author

number of available hotel rooms, grew by 35.7% and further growth was expected (Oxford Business Group 2016). Second, such increase in extractive activities and cement requirements arises from the changing consumption patterns of Sri Lankan middle classes, increasingly oriented toward purchasing material goods such as luxury houses, vehicles, and IT technologies. (Department of Census and Statistics 2015).

For the last 10 years, Foreign Direct Investments (FDIs) have increased as well, with the bulk of the investments devoted to infrastructures (roads, ports, airports, railways, and power plants). The renovation of the Port of Colombo and the construction of the Port of Hambantota, made Sri Lanka a leading shipping and trans-shipment hub (Ibid.). The total road network steadily increased from 2002 (Knoema 2011b). However, the development of mega scale physical infrastructures slowed down during 2015 due to environmental concerns and citizen protests (Central Bank of Sri Lanka 2015).

Overall, the social metabolism of Sri Lanka increased together with the GDP. In the accounts of Physical Domestic Extraction and Imports, four main sectors are included: Biomass, Fossil Fuels, Building Materials, Metallic and Industrial Minerals (Martinez-Alier et al. 2016b). The area of agricultural land gradually augmented, with higher rates of growth from 2009 (Knoema 2011a) and the domestic extraction of biomass almost doubled from the 1970s to 2015 (Fig. 1), while population increased from 12 to 20 million. A dramatic growth in the extraction of building and other non-metallic materials can be observed over the same span (Fig. 1). The per-capita extraction passed from 1.69 tonnes in 1970 to 3.01 tonnes in 2010. Interestingly, since 2002, the quantity of extracted non-metallic minerals exceeded biomass (Fig. 1). This is related to the boom in the construction sector. The extraction of metal ores is almost insignificant (Fig. 1). There is no record of fossil fuel extraction in the country. On the whole, biomass and non-metallic minerals (for the building industry or fertilizers) take the highest share of extraction (UNEP 2016). Furthermore, over the last 20 years, also the domestic material consumption (DMC is domestic extraction plus imports minus exports) steadily increased (Fig. 2), with a predominance in non-metal ores and imported fossil fuels in the total consumption.

The total energy consumption of the country gradually increased over the last two decades (Knoema 2011c; Akhmat and Zaman 2013) (Department of Census and Statistics 2015). Electricity supply was mainly provided by petroleum based thermal power and hydroelectricity. To meet the increased energy requirements, Sri Lanka is investing on coal. The contested Norocholai power plant of 900 MW (Case 9) was completed in 2011, mostly fueled by Indonesian coal. Imported oil and coal fuel the Sri Lankan economy (Kuo 2013), although the generation of electricity

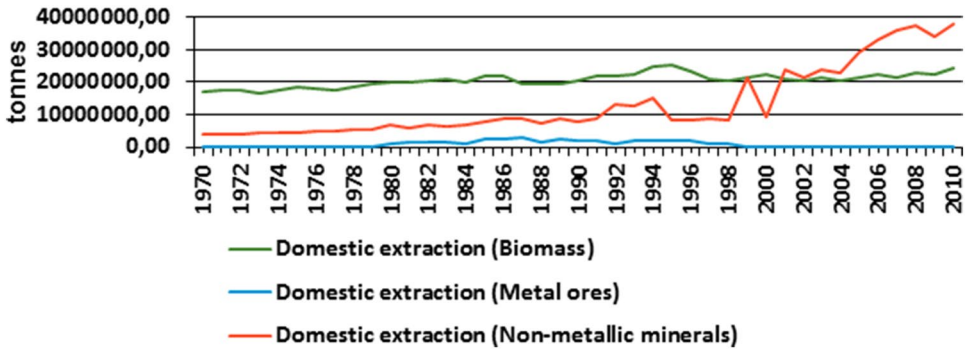


**Fig. 1** Physical domestic extraction in tonnes. Created by the author with knoema.com. Source: UNEP 2016

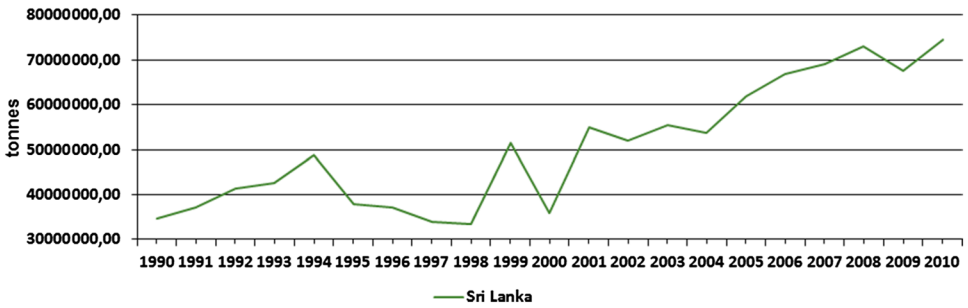


**Fig. 2** Domestic material consumption in tonnes. Created by the author with knoema.com. Source: UNEP 2016

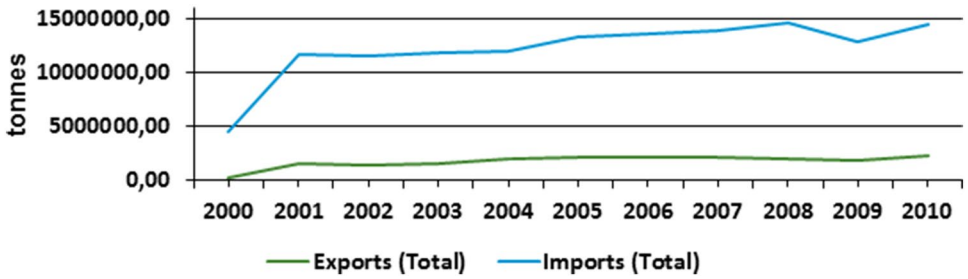


**Fig. 3** Physical imports and exports in tonnes. Created by the author with knoema.com. Source: UNEP 2016

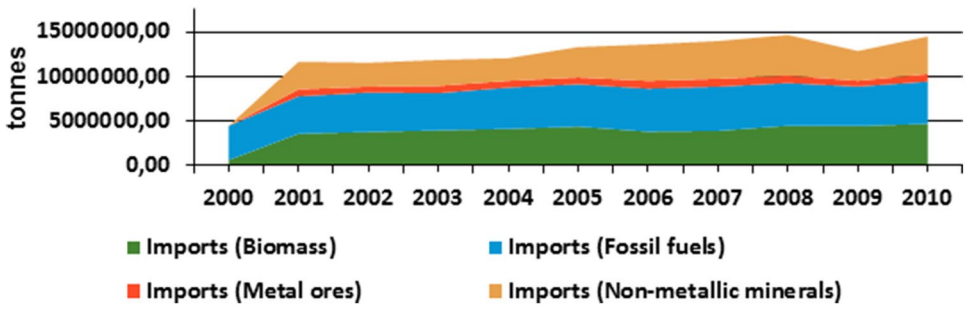


**Fig. 4** Physical imports in tonnes. Created by the author with knoema.com. Source: UNEP 2016

through small private-sector hydro power plants has grown (Ariyadasa 2011).

Sri Lanka is not an important exporter of raw materials. It has a positive physical trade balance (UNEP 2016), meaning that the physical imports exceed exports. Since 2000, physical imports exceed almost six times physical exports (Fig. 3), with fossil fuels, biomass and non-metallic minerals representing the bulk of imports (Fig. 4), while the bulk of exports are coved by biomass (UNEP 2016). This suggests that Sri Lanka is not subject to 'ecologically unequal exchange' in terms of material flows. 'Ecologically unequal exchange' occurs when a state has a negative physical trade balance, i.e., exports exceeding imports. However, not all peripheries can straightforwardly be considered as extractive economies serving the industrial core. This particularly applies to those transition countries such as India and China that are net importers. Singh and Eisenmenger (2010) maintain that the pattern of the North exploiting

the material resources of the South (as for South America and Africa) applies only to countries with low population density, while this is not the case for high population density countries, where it is more likely that labour is being exploited instead of resources. This might be the case for Sri Lanka as well which is highly populated and well known for its cheap labour manufactures. However (as in India and China also), internally, some parts of the country provide raw materials to the rest of the local economy. Therefore, to a certain extent, there is an internal ecological-economic colonialism or, in other words, internal ecologically unequal trade (in terms of material flows). In addition, some forms of Tourism could also be seen as economic manifestation of colonialism, and they results in conflicts as we shall see.

## Sri Lanka: from the cult of wilderness to the environmentalism of the poor

Over its long history, Sri Lanka faced different types of environmentalism and approaches to nature originated and put into practice by different social groups.

During the pre-colonial period, traditional environmental friendly life styles were at the basis of the local cultural practices. For instance, the permit to clear virgin forest was granted by the village chiefs only to new married couples. Moreover, eco-friendly crop protection measures such as cultivation of small portion of land to attract birds for pest management in paddy and performing rituals preventing the invasion of insects within paddy field were widely practiced, persisting still today within some rural areas as part of local traditional knowledge (Senananayake 2006).

Things changed during colonial times when environmental concerns were used to repress *chena* (shifting cultivation) to foster the interests of the planters. The dispossession of native forests, on the excuse of the practice of *chena*, led to the establishment of tea plantations. At that time, there was no organized resistance movement but isolated instances of rebellion (Martinez-Alier 2002).

Until recent times, Sri Lankan environmentalism was mainly focused on 'the cult of wilderness'. When Britons moved to Sri Lanka to set coffee, tea, and rubber plantations, they deprecated shifting cultivation and advocated the protection of forests and natural environment also to preserve animals for hunting. Following the first decades of the 1900s up to the 1970s, a departure from the focus on sport hunting toward wildlife preservation policies can be observed. However, the protection of nature was still focused on recreation aspects and on limiting the possible alternative uses to which the jungle and its wildlife could be put by other segments of the Sri Lankan society as opposed to those of the new local elites (Guneratne 2010).

A new organized form of environmentalism came up in relation with globalization since the beginning of the 1980s (Ibid.). First, a shift from the focus on wildlife and nature to the "value" of biodiversity is observed. As Guneratne (2010, p. 245) points out, nature should no longer be preserved for its own benefit or for recreation but because of the value of genetic information and environmental services. While Gunaratne argues that in Sri Lanka, the issue of biodiversity has mobilized only certain segments of the Sri Lankan middle-class, and the analysis of the cases on the EJAtlas suggests otherwise. For instance, the promotion of the 'Seed and Planting Material Act' which would require the mandatory registration of farmers and the certification of their seeds, mobilized a large number of farmers worried by the transfer of the intellectual property of seeds to the corporate sector and the loss of control over the use of their own seeds and the following abandonment of traditional cultivation practices. Second, while a focus on conservation and protection of nature still persists, the new environmentalism focuses also on opposing the unequal environmental and social damages caused by increased social metabolism, i.e., those damages resulting from the processes that convert raw materials (biomass, fuels, minerals, and metals) into manufactured products and structures (i.e., goods) and wastes (Singh and Eisenmenger 2010) and the following impacts on livelihoods. Over this period, environmental struggles started to focus on the nuisance to the local citizens caused by the implementation of development projects and on the threats generated by such activities to the livelihoods of rural communities and of urban people.

Milestones of the 'new' Sri Lankan environmental movement are the campaigns against the construction of Kandalama hotel 1991, the campaign against the coal power plant in Trincomalee, stopped in 2016 (Colombo Gazette 2016) and the fight against the privatization of Eppawela phosphate deposit (1999) which was also successfully stopped in 2001. All these mobilizations addressed threats to the livelihood and well-being of the impacted communities. They were related to facts in the ground and to local and global policies, as proven by the Eppawela and Kandalama hotel cases, since the former arose from resource extraction for export by a multinational US Company (Mendis 2001), while the latter was caused by the expansion of tourism and the need to develop new sites (Guneratne 2010). This new environmentalism was driven also by the global discourse on environment to which 'many activists were exposed, as manifested in international agreements such as the Stockholm Declaration of 1972 and the Convention on Biodiversity of 1992 (Gonzalez 2013) which underlined the link between a safe environment and the fulfillment of human rights.

Overall, the environmental movement in Sri Lanka is active since 150 years ago. However, while at its inception, it was focused on the protection of wildlife for the benefit of

a small elite or for safeguarding nature itself, from the end of the 1970s, it started contesting the unequal distribution of ecological goods and negative impacts among diverse groups of humans, as a consequence of so-called development and including elements of an 'environmentalism of the poor' (Martinez-Alier 2002).

## Socio-environmental conflicts in Sri Lanka

The cases on the EJAtlas are recorded under categories and types. Each case belongs exclusively to one of ten main categories and can then be marked under different types. Looking at the category of the 26 conflicts recorded, Biomass and Land conflicts is the most represented category (8 cases); they are mostly related to the implementation of intensive plantations for the production of food and cash crops, particularly rubber. Four cases fall under the category 'Water Management', against the construction of hydroelectric dams. Other four are classified as 'Industrial and Utilities' conflicts, whereas the conflicts are related to a cement factory, the contamination of water resulting from a gloves factory and two campaigns about the presence of lead in enamel paints and of high level of mercury in skin whitening cosmetics. Three cases figure under 'Infrastructure and Building' conflicts and refer to the implementation of a highway, of an offshore city in Colombo and to the appropriation of land for the construction of buildings to host returnees after the civil war. Moreover, there are two conflicts related to 'Minerals and Ores material extraction', specifically a stone quarry and one case of river sand mining. Other two relate to tourism, specifically resort construction. Finally, there is one conflict regarding 'waste management' for the implementation of a sanitary landfill, one for 'fossil fuels' related to the impact of a coal power plant (already mentioned), and one that concerns a hypothetical nuclear power plant to be built by 2025 fueled by Sri Lanka's thorium deposits (Akhmat and Zaman 2013).

At the secondary level, land acquisition (9) and deforestation (9) appear often because many of the conflicts involve, apart from the main cause, also land grabbing and change in land use. The implementation of tourism facilities appears often as well (four cases). Even when conflicts are not directly related to tourist resorts, quite often land is confiscated for a certain purpose and then used later for the creation of tourism facilities. This is illustrated in the case of 'Land grabbing by the Army', where local inhabitants were displaced for unknown reasons and then discovered that tourism infrastructures have been constructed in the area. Building material extraction (3), intensive food production and monocultures (4), dams and water distribution (4), transport infrastructures (3), GMOs (2), plantations (2) are other disruptive activities as well as landfill and toxic waste disposal (2). Finally, there are conflicts linked to agro-fuels and biomass energy plants (1), agro toxics (1), chemical industries (1), coal processing (1), interbasin water transfer (1), manufacturing activities (1), military installation (1), nuclear power plants (1), pollution related to transport (1), ports and airports (1), urban development (1), water access rights (1), water treatment (1), and wetlands and coastal zone management (1).

The commodities at the root of the conflicts are land (9), electricity (6), tourism services (4), agricultural commodities [including rubber (2), sugar (1), banana (1) and cashew (1)], and building materials such as cement (1), sand, gravel and granite (3). Water appears as well (4), mostly in relation with hydroelectric projects. Chemical products (1), industrial waste (1), lead (1), manufactured products (3), pesticides (1) are other commodities. Here, as well, each case can involve more than one commodity.

To sum up, the most represented conflicts are those about land acquisition and construction activities, generally understood as the implementation of infrastructures. Interestingly, the conflicts about mining are also related to the construction sector, because the extracted materials (sand, gravel, and stone) are used for building. This is also true for the industrial conflicts, where one of the reported cases relates to the production of cement and its negative impacts. Intensive plantations are also an important factor of conflict. Moreover, industrial plants, water management and waste are significant, while metal mining does not appear in the list.

The reported conflicts occur all along the commodity chains. The predominance of conflicts over deforestation (II level) and within rural areas suggests that there is an expansion of the 'commodity frontiers' to meet the increasing need of materials to 'feed' the Sri Lankan economy. Plantations for food and cash crops are expanding in the forest as well as the extraction of natural resources necessary for the construction sector. This follows the local development policies and also reflects 'internal colonialism' but with links to the globalized economy. On one hand, luxury houses, hotels for leisure, cosmetics and increasing energy requirements are prerogative of the emerging Sri Lankan urban middle class. On the other hand, tea and rubber are products for export. Moreover, the construction of ports and other facilities is mainly directed to improve the import–export capacity and to attract FDIs rather than directly improving the livelihoods of local communities (Venugopal 2015; Ministry of Finance and Planning and Department of National Planning 2006).

### The actors

To understand socio-environmental conflicts, it is important to determine the social actors involved (Temper et al. 2015). Many socio-environmental conflicts arise against the

decisions of local or multinational companies or state actors. This is also the case in Sri Lanka.

In each, one of the analyzed cases at least one governmental institution is involved as promoter of the project, sponsor, or regulator. Various ministries are involved depending on the policy area to which the economic activity triggering conflict belongs. Among these we can mention the Ministry of Irrigation and Water Management (2), the Ministry of Power and Energy (2) and the Ministry of Mahaweli Development, which is involved in the controversial Uma Oya Multi-Purpose Project that aims to generate hydropower and water for industrial activities. Moreover, is worth noting the involvement of other governmental environmental agencies such as the Ceylon Electricity Board and the Central Environmental Authority (CEA). Particularly, the CEA, which is the main institution for the protection and management of the environment (UNEP 2009), is involved in 11 cases over 26.

IFIs appear as well. The Asian Development Bank appears involved in three cases regarding the construction of infrastructures, while the World Bank is involved in two cases of land grabbing. In many conflicts, foreign institutions emerge as financier or promoter of the contested activities. Among these are the government of Iran and the export and development bank of Iran (Uma Oya Multi-Purpose Development Project), the government of India (Nuclear energy program), the Export–Import Bank of China (Norocholai Coal Power Station), the government of Korea, and the Korean International Cooperation Agency (Sanitary landfill in Waga Pelpola). They testify to the shift from Western to non-Western aid and investment during the last years.

This shift occurs also in the private sector. A Japanese firm (Kumagai Gumi ltd) carried out the construction works of the Colombo-Matara highway, while an Iranian company (Hadish Engineering) is involved in the Uma Oya Multi-Purpose Development Project. The China Communication Construction Company Ltd. appears as one of the major investors and the CHEC Port City Colombo Ltd. is in charge of carrying out the infrastructure works. The China Machinery Engineering Corporation is the building company for the Norocholai power plant. Moreover, companies from China and India are involved in the production of whitening skins cosmetics containing mercury (conflict number 10).

Western-based corporations are involved as well. For instance, Holcim from Switzerland owns the cement factory (case 11) that is seen as a threat to the health of local population due to the incineration of waste to fuel its kilns. Monsanto is involved in the conflict regarding the 'new seed law' and other companies such as Bayer and Syngenta are mentioned in the case 'Agrochemical Pesticides'. Sri Lankan businesses figure as well in no less than half the cases (13 cases), especially in relation with smaller projects such as the implementation of mini hydro power plants, the tourism projects, and the implementation of plantations. In 6 cases out of these 13, Sri Lankan companies appear together with foreign companies.

Finally, it is worth noting the involvement of the National Army in two cases of environmental conflict: 'Land grabbing by Army' and 'Silawathurei large-scale Cashew plantations'. The Army is investor and manager, it carries out the land dispossession, but also manages the revenues from plantations. Sri Lankan authors notice an on-going militarization even if the war is officially over (Nadarajah and Sentas 2013).

## Impacts

On the whole, the main impacts from the controversial projects are loss of land and biodiversity, rapid depletion of forest cover and resultant hydrological and environmental impacts. Moreover, such economic activities often result in pollution of the environment leading to perceived dire consequences in addition to the destruction of ecosystems and watersheds. Loss of land in the impacted communities follows the implementation of resorts, road building, construction of infrastructures for power generation and intensive plantations, covering all the categories of conflicts previously analyzed. Land is the primary resource underlying the use of most other natural resources; for this reason its use is often contested. Access to land also provides access to livelihoods, since it can offer food, jobs and other 'services' such as wood or water. Land was one of the central issues of the civil war and today is still at the centre of dispossession episodes that occur as a consequence of development projects (Transparency International Sri Lanka 2014). Conflicts for land and displacement often overlap with issues connected with the civil war. That is, there are cases of land dispossession executed by the Army for the Army. Moreover, conflicts occur when land is contested between groups because specific actions have been taken by political parties to encourage or facilitate the resettlement of particular communities at the expense of other groups and of nature. This is the case of 'Land Grabbing in Wilpattu National Park'.

Displacement resulting from land acquisition is mentioned in three cases: 'Norocholai Coal Power Station', 'Land grabbing by Army', and the 'Colombo-Matara highway'. In several other cases, displacement occurs when impacted communities are not able to rely anymore on the natural resources provided by the area and decide to migrate to cities in search of other jobs.

In general, the loss of land affects the impacted communities that rely on natural resources for their livelihoods. A few examples can highlight this point. In the case 'Silawathurei Cashew Plantations', mobilizing communities complain that military forces have cleared land to set a cashew plantation, denying locals access to the cultivation of their

lands. Furthermore, the construction of a luxury hotel with a golf course in the Soragune Forest is affecting the villagers living in the area who are now excluded from access to forest products (medical plants, mushrooms, honey, and firewood). However, loss of livelihood is not only related to land. Fishermen are impacted as well. Some projects impact on marine or river fish reserves, as it happens with sand mining operations or when it comes to the release of hot water in the 'Norochcholai power plant'.

Damages to drinking water sources from pollution and harms to irrigation systems and agricultural lands result from tourism projects and plantations as well as from sand extraction, quarries, industrial activities, and the construction of dams and power plants. In the 'Rathupaswela water contamination' case the release of acid effluent by a factory affected the well water of the nearby communities that as a result are forced to get water from other sources. On the other hand, the implementation of large-scale plantations and tourism resorts deprives the local population from a large amount of water. One of the main concerns in the protests against the Uma Oya river diversion and Mahaweli hydroplant is that it would have affected the right of local people to access free and good quality water. The same concerns relate to the case 'Eco-Golf Resort', where local communities fear that the pesticides used for the golf course will impact on the water catchment of Soragune forest, which provides water to more than 7000 farmers.

Deforestation is one of the most important impacts, often connected to other visible or potential ones such as biodiversity loss, soil erosion, floods, loss of landscape and aesthetic degradation, drought and loss of traditional practices such as the use of plants for medical purposes. Hence, deforestation resulting from economic activities is perceived as having both environmental and socio-economic consequences that can affect the livelihoods of local communities. Moreover, deforestation is also at the base of the human-elephant conflict, a widespread problem in South Asia (Santiapillai et al. 2010). Clearance of the forest for quarries, resorts and plantations deprives the elephants of their natural environment as these projects dry out the reservoirs that provide water to the pachyderms that as a result enter the nearby villages, hurting crops and causing injuries to people.

Pollution is another perceived widespread impact and it is associated to all the different economic activities identified at the basis of the mobilizations in Sri Lanka. Air pollution, groundwater pollution or depletion, soil contamination, surface water pollution, and noise pollution are associated with tourism, biomass extraction, industries, water management, mineral ores extraction, building of infrastructure, water management and energy production. For instance, Holcim cement factory is contested because it generates polluting air dust particulates, fumes, and gases. Also of concern is the 'Norocholai Power Plant', due to the exposition to the ash-filled air (discomfort in the eyes, asthma, respiratory disease, coughs). Finally, intensive plantations and the construction of tourist resorts are criticized for releasing pesticides and affecting the quality of water. At the same time, the use of agro-chemicals, lead in paint, the high level of mercury in skin whitening cosmetics are producing environmental and health impacts.

## The resistance

### Mobilizing groups and forms of mobilization

Local environmental organizations play an active role in 25 cases over 26. Among these, the most relevant are the CEJ, the EFL, People's Alliance for Right to Land (PARL) and Sri Lanka Nature Group. However, the number of involved EJOs is larger than this, confirming the vitality of environmental NGOs pointed out by Guneratne (2010). A significant number of conflicts (21) see also the presence of 'local scientists and professionals'. This is because many EJOs are composed by scientists and professionals, particularly lawyers, which assist affected people to protect their environmental rights. The environmental movement counts also with members of the impacted communities, mainly farmers and fishermen. Over a total of 26 cases analyzed, in 22 cases, the impacted population live in rural or semi-rural areas, where the majority of the people rely on agriculture and fishing (Department of Census and Statistics, 2006). Sometimes, affected people create ad-hoc local committees as in cases number 9, 14, 16, 18, and 22. The presence of scientists and professionals in the Sri Lankan environmental justice movement has a parallel in cases elsewhere of "Activism Mobilizing Science" (Conde 2014), where citizens, communities, and grassroots movements resort to scientists to co-produce new knowledge that challenges environmental injustice.

It is worth noting also the involvement of religious groups in the mobilizations (7 cases). For instance, the Engaged Buddhist Solidarity for Nature participates in two conflicts regarding the protection of forests from plantations (cases number 3 and 4). Moreover, the local Christian Chuch and the Mosque had a role in the mobilization against the Norocholai power plant (Mahees 2010). However, differently from other contexts in India and South East Asia, in the 26 reported conflicts in Sri Lanka there is no involvement of indigenous communities or of ethnic minorities like the Tamils claiming rights as such.

The significant presence of local EJOs together with farmers and fishermen grassroots organizations suggests that alliances are formed between environmental organizations and the impacted communities. Networks between the protesters and international organizations are less common although in nine cases there is involvement of international grassroots organizations in the resistance, such

as Friends of the Earth International, Environmental Law Alliance and the Asian Peasant Coalition.

The forms of mobilizations displayed are mainly non-violent. Particularly, there is a wide use of the legal means such as petitions to Courts and legal actions. The use of official complaints letters directed to relevant stakeholders is another widespread means of resistance, together with the public objection to the Environmental Impact Assessment(s) (EIA). That is, in each of the registered environmental conflicts at least one of those legal means has been used by activists to carry on their struggle. This is probably related to the active role of EFL within the analyzed conflicts. Other than legal actions, EJOs are engaged in spreading public campaigns on a local and international ground. These campaigns are mainly based on community and participative researches, using different media to spread reports and knowledge about a specific issues. On one hand, the goal of a public campaign is the opposition to a certain issue, but on the other, it aims to widen the knowledge of local communities to strengthen their participation in the context of development decision-making process. The high number of cases in which as a strategy of resistance the protesters build networks with different NGOs (17 cases) and develop collective actions (14 cases), combined with the high number of cases involving the creation of alternative reports and campaign, highlight the important role of environmental NGOs in informing and connecting communities with each other.

Street protests and marches are also significant. Among these, two interesting forms of resistance are the 'Dharma Yatra' and the 'Tree Ordination', both belonging to the Buddhist tradition. In Sri Lankan cases, Dharma Yatra consists in a 'peaceful silent pilgrimage' while 'Tree Ordination' is the practice of recognizing the sacred nature of trees by wrapping them in traditional monks' robes to stop deforestation. A Dharma Yatra and a Tree Ordination have been conducted to sensitize people and public institutions regarding land grabbing and deforestation in Nilgala forest and Soragune.

A relevant issue is that for none of the cases registered, we observed means of resistance such as sabotage, property damage/arson and threat to use arms. In general, the intensity of the Sri Lankan conflicts is low or medium. Only one case is marked as 'high intensity' conflict, namely, 'Rathupaswela Water Contamination' case where in a demonstration held on August 2013 by local residents claiming their right to water, polluted by a factory, the military killed three people. The relatively low intensity of the conflicts may be related to 'violence fatigue' after the civil war but also to an atmosphere of censorship and repression. Human Rights Watch states that it was only since 2015 that the new President at the time took some measures to abolish surveillance and censorship of media and civil society groups (Human Rights Watch 2016). This may have affected the creation of social movements and the expression of social conflict.

### Claims and outcomes

Concerning the claims expressed by the mobilizing groups, we can observe a general commitment to the defence of nature and environment as pristine nature, without human interference. This is particularly the case for projects implying deforestation activities. The involvement of Environmental Organizations in the resistance such as EFL, composed by members of the Sri Lankan elites (Guneratne 2010), can bias such mobilizations towards "the cult of wilderness". However, the analysis of the cases suggests a different interpretation, since there is also involvement of local farmers or peasants who fear the indirect impacts and risks deriving from deforestation and, therefore, mobilize to protect their livelihood. Moreover, most of the conflicts involve CEJ, whose first aim is explicitly the promotion of environmental justice. The demands contest the unequal distribution of ecological goods and negative impacts on ecosystems and consequently on the people resulting from so-called development. Local communities make claims for the protection of traditional environmental practices put under threat by development projects. For instance, land grabbing for plantations, hotel and road construction prevents locals the access to some necessities, such as medical plants and water sources, once freely offered by the local environment.

In each one of the EJAtlas' 26 cases there is emphasis on the law; it is alleged that at least one of the local environmental mandatory procedures has been violated by the contractors. Furthermore, local communities and EJOs stress the need to improve public consultations. The affected communities are often uninformed of entitlements in land transactions. We have no cases in which local populations have organized their own consultations, as happens in mining conflicts in some South American countries (Walter and Urkidi 2015). Further, affected people are often excluded from negotiations and are not compensated to restore them to their original living standards. For these reasons, local EJOs ask both for new legislation and for the application of the existing regulations that guarantee the communities participatory process.

Four cases are marked as a success in (EJ) and 10 as 'not sure' (in proportions similar to the EJAtlas as a whole). In the cases of 'success' and 'not sure', the projects that were at the base of the conflicts have been stopped, so the author was in doubt whether they all could be classified as "successes". However, the achievement of EJ is often doubtful given that projects can be just temporarily stopped waiting for a court response. Moreover, contested projects can be implemented in another area affecting somebody else. Finally, despite being stopped, they can have damaged the local environment

causing negative impacts lasting for long time and, therefore, badly affecting the livelihood of local communities. Full EJ can be achieved only if there is equitable distribution among the whole population of costs and benefits of the development projects that must be implemented in a way that considers and avoids the negative impacts on the environment and consequently on the livelihoods of local communities. More importantly, as argued by Faber and McCarthy (2003), the struggle over EJ does not only focus on distribution of environmental risks but also on preventing them from being produced in the first place, so that no one is harmed at all. In addition, EJ also requires the participation in decision making of marginalized communities and the recognition at the policy level of possible different capabilities, worldviews and understanding of development. If you look at Sri Lanka cases, compensation for land dispossession and for the negative impacts of the projects are not sufficient. The projects are implemented causing several environmental damages. The participation in decision making by the local communities is weak and the recognition of different model of development is not considered by the government whose main policies regard foreign direct investments, industrialization and mass tourism as indispensable.

## Conclusion

In Sri Lanka as elsewhere, the economic activities geared to economic development increase or change the social metabolism. Those who are negatively impacted mobilize sometimes with claims for socio-environmental justice. The need for construction materials to support the boom in the building sector and the increase of intensive plantations at the 'extraction frontiers' within new territories such as forests and costal zones, is causing deforestation, biodiversity loss, and hurting the local communities which sometimes complain. There is, however, no metal mining or fossil fuel extraction causing conflicts. Tourism and industries as well as the construction of new infrastructures (dams, power plants, roads, ports), aiming to foster and sustain development, are causing displacement, pollution, land degradation and water shortage, particularly affecting the communities of farmers and fishermen whose livelihoods are based on such natural resources. As a result, those affected social groups mobilize against unfair impacts.

The analysis of the social actors involved in the conflicts suggests that those who have the power to appropriate the resources and generate negative environmental changes are mostly the state and state enterprises together with IFIs and international institutional actors who are able to implement development policies promoting the construction of large infrastructures, plantations and mass tourism. Some parts of the country provide raw materials to the rest of the local economy to fuel economic growth and to sustain the changing consumption patterns of the emerging urban Sri Lankan middle class. Therefore, to a certain extent, an internal ecological-economic colonialism or internal ecologically unequal trade (in terms of material flows) can be tracked. On the other hand, the involvement of national and international actors from the private sector, with a shift towards China and other Asian countries, highlights how the appropriation of resources is set within the context of the global economy. Foreign and Sri Lankan investors aim to make profits, sometimes causing damages externalized or shifted to the environment and to local communities.

These elements are in line with the theoretical framework that sees conflicts as a result of the expanding social metabolism and the unequally distributed outcomes. Moreover, the case of Sri Lanka highlights some local geographical, cultural and institutional variables that 'mediate' the rise of conflicts (Muradian et al. 2012). For instance, development activities modify the reserves of water in a region where the majority of the population lives in rural areas and depends from irrigation for their livelihoods. This is likely to increase conflicts due to the perceived or actual threats on the impacted communities. Furthermore, deforestation affects the elephant paths, so that elephants are then forced to pass through villages and crops, hurting local livelihoods. Moreover, land conflicts related to economic activities overlap with conflicts over land originating from the civil war. Finally, local institutional factors, such as the militarization of the country are bringing new actors (the Army) in the fragile context of ecological changes.

Within mobilization an important role is played by local environmental justice organizations which inform and connect impacted communities with each other. A minor but distinctive role is played by religious Buddhist groups. Very few environmental conflicts have very violent outcomes, and this is in contrast to the findings in other articles of this special feature (Navas et al. 2018; Del Bene et al. 2018).

Development projects cause widespread impacts on nature in Sri Lanka, therefore, many of the mobilizations are aimed to protect the natural environment. However, even in these cases, we have shown that the protection of the environment demanded by the mobilized groups in Sri Lanka does not aim just to protect nature itself. Although many conflicts can indeed be associated to 'the cult of wilderness', the analysis of most cases suggests that environmental claims are concomitant with claims for environmental justice arising from an 'environmentalism of the poor' (although not of tribal peoples). Claims for equitable distribution, participation, fair procedures and recognition by the mobilized communities are traits of environmental conflicts in Sri Lanka as so often also in other countries. For this reason, the environmental movement in Sri Lanka can be considered as part of a global movement for environmental

justice (Martinez-Alier et al. 2016a; Gerber 2011; Anguelovski and Martínez-Alier 2014).

To overcome the ecological, social and economic problems affecting Sri Lanka an alternative solution to those proposed by policies focused on economic growth could be the path toward "radical ecological democracy". Such alternative framework push for a transformative economic, political, socio-cultural and ecological change leading to ecological sustainability and human equity and putting communities and every single person at the centre of decision-making processes (Kothari 2014; Temper et al. 2018). A radical transformation requires a change in the power structures that reproduce economic, ecological and social injustice.

The analysis of socio-environmental conflicts clarifies the interactions between human and eco-systems, the political, social, environmental, cultural, and economic dimensions of such interactions; and perhaps the role that conflicts have in stopping or slowing down the degradation of the environment (Scheidel et al. 2017). Despite our views on the difficulties in achieving true environmental justice, the careful analysis of 26 environmental conflicts in Sri Lanka has led us to conclude that there are some undoubted cases of success, and this should encourage the movement. Is the global movement for environmental justice, certainly present in Sri Lanka, a force helping to move economy and society to sustainability? In Sri Lanka, we can record many notorious socio-environmental conflicts and a few successes of environmental justice, but despite such efforts, the economy is still moving away from sustainability.

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