

# Drivers of Deforestation?

## Facts to be considered regarding the impact of shifting cultivation in Asia

Submission to the SBSTA on the Drivers of Deforestation  
by Asia Indigenous Peoples Pact (AIPP) and International  
Work Group for Indigenous Affairs (IWGIA)



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An estimated 260 million indigenous peoples live in Asia<sup>1</sup>. Most of them inhabit forested uplands where a large number of them practice shifting cultivation, which is also called as swidden cultivation or rotational farming. For them, shifting cultivation is not merely a technique of farming; it is their way of life. Government policies and laws have attempted to limit or outright ban shifting cultivation since it is considered a primitive and destructive form of land use. Recently, several governments of the region involved in REDD have identified shifting cultivation as a driver of deforestation in their REDD Readiness-Plan Idea Note (R-PIN)<sup>2</sup> and Readiness Preparation Proposals (RPP)<sup>3</sup>.

Decades of research on virtually every aspect of shifting cultivation has generated sufficient evidence to prove that its sweeping condemnation by government bureaucrats, politicians or professionals is based on insufficient and erroneous information, or quite simply myth<sup>4</sup>.

Past state intervention aimed at restricting or eradicating shifting cultivation has had serious negative consequences for the affected indigenous communities, and we therefore call on SBSTA to ensure that the discussion on shifting cultivation in the context of identifying drivers of deforestation is not based on the old prejudices, but on the facts that have been well established by scientific researcher and is easily accessible.



Map of countries in Asia where indigenous peoples practice shifting cultivation and the estimated population of indigenous peoples

<sup>1</sup> AIPP and IWGIA, 2010. Who we are Indigenous Peoples in Asia. p.5  
<sup>2</sup> FPP, 2009. Seeing 'REDD'? Forests, climate change mitigation and the rights of indigenous peoples and local communities. Updated version. p. 1  
<sup>3</sup> FERN and FPP, 2011. Smoke and mirrors, A critical assessment of the Forest Carbon Partnership Facility. p. 22  
<sup>4</sup> Laungaramsri, Pinkaew 2005. Swidden agriculture in Thailand. Myths, realities and challenges. Indigenous Affairs 2/05. Copenhagen: IWGIA, p. 6ff

To that end we are presenting a brief summary of key issues that should be taken into account:

- Key findings of research on shifting cultivation, underpinning the dire need to earnestly consider indigenous peoples' perspectives while assessing its impact on forests and climate change
- The human rights violations and other impacts resulting from state policies prohibiting or unduly restricting shifting cultivation

## I. Facts vs. fiction: the need to correct false assumptions on shifting cultivation

Government policies on shifting cultivation are usually based on lack of proper knowledge and understanding of the livelihood systems of indigenous peoples, and the social and cultural values attached to it. Often, stereotypes rather than scientifically established facts have guided the development and implementation of these policies.

The stereotypes around shifting cultivation that have prevailed since over a century include:

- Shifting cultivation is technologically primitive, inefficient and wasteful, prevents development and thus keeps people in poverty
- Shifting cultivation is destructive to forests and soils

More recently, a new aspect has been added:

- Shifting cultivation causes carbon emissions and thus climate change

Researches over the past decades have produced ample evidence that counters the prevailing prejudices against shifting cultivation embodied in states' forest policies and programs.

Key issues and findings that need to be considered seriously in the discussion on the impact of shifting cultivation on forests and climate change are briefly summarized here.



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### Shifting cultivation is not a major driver of deforestation

According to the FAO, UNDP and UNEP, the main causes of deforestation and thus carbon emission in Asia have been intensification of agriculture and large-scale direct conversion of forest for small-scale and large industrial plantations, and not shifting cultivation<sup>5</sup>. In fact, according to the FAO's own definition of forest, shifting cultivation does not cause deforestation but forest modification.<sup>6</sup> Nevertheless, shifting cultivators still rank prominently on the priority list of decision makers for corrective intervention in their forest conservation programs.

### Shifting cultivation contributes to biodiversity enhancement and food security

Shifting cultivation is a complex land use system that typically relies on a large number of crops planted both simultaneously and successively during the cropping cycle. In the Karen community of Huay Hin Lad, more than 100 varieties of domesticated plants are grown, 90 of them in shifting cultivation fields.<sup>7</sup> Under long-fallow systems of shifting cultivation, a highly diverse forest landscape is created. The presence of secondary forests of different ages along with remaining primary forests results in an overall increase of biodiversity. Growing a large number of crop varieties and the increased availability of edible wild plants in secondary forests, as compared to primary forests, contributes significantly to food security.



<sup>5</sup> FAO, UNDP and UNEP, 20 June 2008. UN Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD). Framework Document. p. 3

<sup>6</sup> Erni, Christian 2009. Shifting the blame? Southeast Asia's indigenous peoples and shifting cultivation in the age of climate change. Paper presented at the seminar on "Adivasi/ST Communities in India: Development and Change", Delhi, August 27-29, 2009, p. 6

<sup>7</sup> AIPP, IWGIA and NDF, 2011. Climate change, trees and livelihood: A case study on the carbon footprint of a Karen community in Northern Thailand. p. 10, p. 16

The replacement of shifting cultivation by permanent land use results in a substantial loss of crop genetic diversity and the traditional knowledge on seeds.<sup>8</sup> Likewise, it also hastens the disappearance of certain species of wildlife. For example, the areas surrounding Doi Inthanon National Park, Chomthong, Chiang Mai has already seen the reduction in the number of some species of wildlife due to the banning of shifting cultivation.<sup>9</sup>

## Carbon emission and sequestration under shifting cultivation



The changes in forest cover are receiving extra attention of the global community because of its inherent capacity to act both as sink and source of atmospheric carbon dioxide. Hence various efforts have been initiated to reduce carbon emissions. For instance, climate change mitigation programs like REDD have been devised to address deforestation and forest degradation. Given the fact that the clearing of vegetation by burning is a key aspect of shifting cultivation there is no doubt that carbon dioxide and other greenhouse gases are emitted in the course of a cultivation cycle. It is however very important to keep in mind that most shifting cultivation systems practiced by indigenous peoples are rotational systems, which means that after harvesting a cleared field it is left to revert to natural woody vegetation during the fallow period, which is again cleared after some years as a new cycle begins. The amount of carbon dioxide released through burning and decomposition during the preparation of the field and the cropping period is sequestered again through natural restoration of the forest during the fallow period.<sup>10</sup> A recent study in Northern Thailand which tried to assess the ecological footprint of a traditional shifting cultivation community found that shifting cultivation farms, including active and rehabilitating fields aged 1 to 10 years, have sequestered 17,643 tons of CO<sub>2</sub> while burning emitted 1745.33 tons of CO<sub>2</sub>.<sup>11</sup> The Intergovernmental Panel on Climate Change (IPCC) has also acknowledged the contribution of fallow to sequestering carbon.<sup>12</sup>

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## The carbon sequestration capacity of shifting cultivation is higher than that of other forms of land use

For a just assessment of the impact of shifting cultivation on climate change it is important to treat it as a form of agricultural land use and therefore not to compare its impact on carbon emission and sequestration with that of undisturbed forests only, but above all with other forms of agricultural land

<sup>8</sup> IWGIA, AIPP and IKAP, 2009. Shifting cultivation and climate change. p. 4

<sup>9</sup> AIPP, 2010. Traditional Livelihoods and Indigenous Peoples. p. 55

<sup>10</sup> Erni, Christian, op.cit., p. 8-9

<sup>11</sup> AIPP, IWGIA and NDF, 2011. Climate Change, trees and livelihood: A case study on the carbon footprint of a Karen community in Northern Thailand. p. 21

<sup>12</sup> Erni, Christian, op.cit., p. 10



use. Comparison of different forms of land use in tropical forests has shown that traditional long-fallow shifting cultivation at the landscape scale is able to sequester more carbon than most other forms of land use. Above-ground carbon stock in long fallow shifting cultivation with cycles of 8 years and more was found to be between 74 and 80 tons/hectare. When shifting cultivators are forced to shorten their cycle to 4 years fallow, the carbon stock is reduced to 8-9 t/h. Under permanent farming of annual crops the carbon stock is only 1-4 t/ha. Industrial plantations on average also store less carbon than traditional long-fallow systems of shifting cultivation. The above-ground carbon stock in rubber plantations is about 50 t/ha, in oil-palm plantations between 36 and 91 t/ha. This is also lower than the carbon stock in other forms of land use common among indigenous peoples, like the rubber agroforests in Indonesia, which are usually combined with shifting cultivation. They have aboveground carbon stocks of 90-116 t/ha.<sup>13</sup>

### The ecological footprint<sup>14</sup> in traditional shifting cultivation communities is small

The study in Northern Thailand on the ecological footprint of a traditional shifting cultivation community referred to above showed that the overall carbon sequestration by far exceeds carbon emission during an average shifting cultivation cycle. Huay Hin Lad community is practicing shifting cultivation with a fallow period of six to ten years. The study has shown that the agricultural areas of Huay Hin Lad

<sup>13</sup> Bruun, Thilde Bech, Andreas de Neergaard, Deborah Lawrence & Alan D. Ziegler (2009). Environmental Consequences of the Demise in Swidden Cultivation in Southeast Asia: Carbon Storage and Soil Quality. *Human Ecology* 37; Van Noordwijk Meine, Thomas P. Tomich, Renato Winahyu, Daniel Murdiyarto, Suyanto, Soetjipto Partoharjono and Ahmad M. Fagi (eds.) 1995. Alternatives to Slash-and-Burn in Indonesia. Summary of Report of Phase 1. ASB-Indonesia Report Number 4. Bogor

<sup>14</sup> The ecological footprint is a measure of human demand of the Earth's ecosystems. It compares human demand with planet Earth's ecological capacity to regenerate. It represents the amount of biologically productive land and sea area needed to regenerate the resources a human population consumes and to absorb and render harmless the corresponding waste.



community are potentially able to store 59,255 tons of CO<sub>2</sub>, while only 2,042.46 tons of CO<sub>2</sub> equivalents are released annually into the atmosphere from agricultural activities, including shifting cultivation. In addition, the data presented by the study shows that Huay Hin Lad community's ecological footprint<sup>15</sup> is three to four times smaller than that of average Thai citizens, and seventeen times smaller than that of US citizens.

Despite all these crucial findings on shifting cultivation, states policies are deliberately turning a blind eye towards the sustainable livelihood systems of indigenous peoples. There are forms of land use practices being un-

dertaken by non-indigenous peoples which also rely on clearing by means of burning, but which result in a permanent removal of woody vegetation. It is critical to distinguish indigenous peoples' traditional long fallow shifting cultivation systems from such less sustainable land use practices and not lump them together under the broad category of shifting cultivation.<sup>16</sup>

## II. Impact of policies and laws restricting shifting cultivation

### Traditional livelihood systems at stake

The future of the traditional livelihood systems of indigenous peoples that are based on shifting cultivation and consequently the traditional knowledge, spiritual and other cultural practices intimately attached to it are at stake due to disinclination of governments to accept shifting cultivation as an established form of agricultural practice.



<sup>15</sup> AIPP, IWGIA and NDF, 2011. Climate change, trees and livelihood: A case study on the carbon footprint of a Karen community in Northern Thailand. p. 19-21

<sup>16</sup> Erni, Christian, op.cit., p. 3-4

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Climate change discourse has assisted these states to further denounce it and to devise new or reinforce existing policies and laws to eradicate shifting cultivation in the pretext of forest conservation and development. These governments claim that shifting cultivation acts as a driver of deforestation and contributes to carbon emission, ultimately causing climate change. These arguments however rest on incomplete or incorrect information,<sup>17</sup> as asserted above. At the same time, indigenous communities suffer from the consequences of government programs targeting shifting cultivation.

### Human rights violation in the name of climate change

Indigenous peoples all over Asia have experienced various forms of human rights violations from the state policies and programs seeking to eradicate shifting cultivation. Laws and policies that criminalize and/or seek to eliminate this traditional livelihood practice still exist in Asian countries, like Bangladesh, Bhutan, Burma, Indonesia, Laos, Malaysia, Nepal, Thailand and Vietnam, thus affecting the wellbeing of millions of people living in the uplands and forests of the region.<sup>18</sup>



In Laos, for example, the 7<sup>th</sup> party congress of 2001 set the target of completely eradicating shifting cultivation by 2010. While the official government rhetoric has slightly changed - what is now frequently referred to is “stabilization” of shifting cultivation - the target of eradicating shifting cultivation has not changed.<sup>19</sup> Furthermore, recent forest conservation programs continue to identify shifting cultivation as a major driver of deforestation.<sup>20</sup> Large-scale relocation has been one of the means by which this was to be achieved. Consequently, the impact of resettlement on the people affected is extremely serious. A study in Northern Laos con-

firmed extremely high mortality rates, in some cases reaching up to 20%, as a result of the increase of communicable diseases such as malaria, cholera or diarrhoea in the resettlement sites.<sup>21</sup>

A recent example of how shifting cultivators’ rights to practice their traditional livelihood system are being violated in the name of climate change is the case of the Karen indigenous people of Song Yang District in Tak Province of Northern Thailand. Mr. Dipaepho and Ms. Naw He Mui Wingwittchha were arrested and penalized approximately USD 96,409 with the accusation of destroying forests and causing the temperature to increase, particularly due to their involvement in traditional shifting cultivation.

<sup>17</sup> Ibid., p. 2

<sup>18</sup> AIPP, 2010. REDD+ Implementation in Asia and the Concerns of Indigenous Peoples. p.3

<sup>19</sup> E.g. in the National Growth and Poverty Eradication Strategy (NGPES) of 2004

<sup>20</sup> E.g. the joint Lao-Japanese Participatory Land and Forest Management Project for Reducing Deforestation in Lao P.D.R. (PAREDD). Project document 2010. <http://www.forestcarbonasia.org/wp-content/uploads/2011/10/4.-PAREDD-report.pdf>

<sup>21</sup> IWGIA, 2007. Development-induced resettlement and social suffering in Laos. *Indigenous Affairs* 4/07. Copenhagen: IWGIA, p. 32, p. 26

It has been shown that the basis of the calculation of the “damage” by the Department of National Parks, Wildlife and Plant Conservation (DNP) is unscientific, and the calculation itself inaccurate.<sup>22</sup>

### Restriction on shifting cultivation increases food insecurity

A serious consequence of government programs to stop or restrict shifting cultivation is food insecurity among the affected communities. In Northern Thailand, the establishment of reserved forests and protected areas has led to a drastic reduction of land available for shifting cultivation. Some communities are not able to practice it at all without risking arrest and detention. As a result, fallow periods had to be drastically reduced, and many families are not self-sufficient in rice anymore.



In Laos, the land allocation program, a seemingly sensible program that ensures tenure security to villagers, was actually also part of the overall strategy to reduce shifting cultivation. People are forced to limit agriculture to the land allocated to them, which is however insufficient to continue a cultivation cycle long enough to maintain soil fertility and thus ensure food self-sufficiency.<sup>23</sup>

A recent study in Vietnam has documented the decline in food security as a result of the restrictions imposed on shifting cultivation.

Bu village and Que village in Cong Cuong district, Nghe An province have been confronting the exacerbating problem of food insecurity right after the introduction of Forest Land Allocation (FLA) by the Government of Vietnam. 62-70% of the local rice production used to come from swidden agriculture. The FLA program imposed the restriction in the use of shifting cultivation ultimately reducing the size of shifting cultivation areas sharply. This has compelled 85% of the households to abandon their practice of three years fallow period (in 2003) and practice permanent cultivation to sustain their livelihoods. This problem has been further stretched by the erratic weather conditions. The two villages experienced a steep drop of upland rice production between 1991 and 2010, from 160 to 30 tons in Bu village, and from 100 to 40 tons in Que village<sup>24</sup>

### Rights, REDD and shifting cultivation

The traditional occupation of shifting cultivation is a main livelihood of indigenous peoples. The article 23 of ILO Convention No. 169 embodies the provision that government should strengthen and promote the indigenous peoples’ traditional activities with the participation of indigenous peoples. Similarly, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) contains several provisions on the rights of indigenous peoples to continue their traditional practices. Indigenous peoples’ rights to their land, territories and resource; rights to determine and develop priorities and strategies for the

<sup>22</sup> NIPT, NDF, AIPP, IKAP and IMPECT, 2009.op.cit.

<sup>23</sup> Asian Development Bank 2001. Participatory poverty assessment. Lao People’s Democratic Republic. Manila: Asian Development Bank, p. 46

<sup>24</sup> Sikor, Thomas and Nguyen Quang Tan 2011. Realizing Forest Rights in Vietnam: Addressing Issues in Community Forest Management. Hanoi: RECOFTC, p. 14-15



development; the right to participate in decision making at all levels and the right to Free, Prior and Informed Consent (FPIC) are enshrined in the UNDRIP.<sup>25</sup> Despite several provisions in these and other international human rights instruments for indigenous peoples they are still struggling to find appropriate space in the discussion on climate change.<sup>26</sup>

While indigenous peoples bear the brunt of climate change<sup>27</sup> they are given only limited space to voice their concerns in the discussion on climate change mitigation schemes like REDD.<sup>28</sup>

According to the updated version of a report by the UK-based Forest Peoples Programme (FPP)<sup>29</sup> “many initial REDD concepts fail to acknowledge forest governance problems, do not propose forest tenure reform and too often unjustly identify ‘shifting cultivators’ as a primary driver of deforestation—without scientific or legal justification.” The critical review of FCFP documents and analyses of eight of the fifteen national R-PPs found that “Most R-PPs rely on biased analyses of the causes of deforestation that blame indigenous peoples and local communities for forest loss and damage, without justification.”<sup>30</sup> This clearly demonstrates how limited the participation and influence of indigenous peoples still is in policy and decision making processes, especially at the national level that are actually crucial for their future. It also gives a clear picture of the continuity of the indifference that governments have been showing towards the livelihood systems of indigenous peoples. Likewise, the lackadaisical approach of the government in addressing the real drivers of deforestation can be perceived vividly.

<sup>25</sup> AIPP, 2010. Traditional Livelihood of Indigenous Peoples. p. 22-25

<sup>26</sup> AIPP, IWGIA and IKAP, 2009. Shifting Cultivation and Climate Change

<sup>27</sup> AIPP, 2010. REDD+ and Indigenous Peoples, A Briefing Paper for Policy Makers. p. 11

<sup>28</sup> AIPP, 2010. REDD+ Implementation in Asia and the Concerns of Indigenous Peoples. p. 3

<sup>29</sup> FPP, 2009. Seeing ‘REDD’? Forests, climate change mitigation and the rights of indigenous peoples and local communities. Updated Version. p. 1

<sup>30</sup> FERN and FPP, 2011. Smoke and mirrors, A critical assessment of the Forest Carbon Partnership Facility. p. 7

## Recommendations to SBSTA

1. To immediately conduct an in–depth review and assessment of the relations of shifting cultivation with forest degradation and conservation in a more holistic manner, taking into account the livelihoods, resource management system, culture and identity of indigenous peoples as shifting cultivators and the findings of credible and independent researches and scientific studies relating to shifting cultivation/rotational agriculture such as the studies of FAO.
2. To engage in constructive dialogues and exchange with states for policy-review and reform especially on the prohibition/restriction of shifting cultivation towards addressing forest conservation and management on the one hand, and the livelihoods, rights and entitlements of forest dependent communities on the other.
3. To provide clear guidance to states within a human rights framework and ecological approach taking into account the perspectives, sustainable livelihood practices and resource management systems, rights and entitlements of indigenous peoples as well as their contributions to forest conservation and climate change mitigation and adaptation particularly in the conduct of studies on the drivers of deforestation and forest degradation as well as in measures to address these.
4. To urge states to implement the REDD agreement relating to the full and effective participation of indigenous peoples in all stages of REDD including the identification of drivers of deforestation, and the respect for the rights and traditional knowledge of indigenous peoples including sustainable livelihoods.
5. To urge the states to adhere to the standards and norms set by international human rights instruments such as UNDRIP and ILO Convention No 169 (where appropriate) for the recognition of the collective rights of indigenous peoples, particularly with respect to issues relating to collective land rights/tenure and sustainable management of forests in relation to sustainable practice of traditional livelihoods while designing, implementing, monitoring and evaluating any plans, policies and programmes related to REDD.





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