

October 2018

EDITORIAL

Dear Members,

This is the newsletter of the Mountain Ecosystems Specialist Group and the second in this intercessional period (2017-2020). This brief publication highlights the diversity of our members and the varied issues they work on concerning mountain ecosystems.

The articles in this newsletter draw attention to the drivers of migration in mountain contexts to illustrate the importance of considering displacement and migration as vital components of ecosystem management. With your support, we plan to pursue this line of inquiry more purposefully in the future.

We received several abstracts for our case studies initiative on Critical Approaches to Gender in Mountain Ecosystems. The abstracts are currently being adjudicated. We thank you for your patience. At the same time, we are still looking for case studies from Africa (all regions) and South America. If you or someone from your networks is interested in submitting an abstract, please get in touch.

We will soon be launching another call for case studies on region-specific indigenous knowledge and conservation practices. We look forward to receiving your contributions on the same.

We wish you all the best with your endeavours across the mountain regions of the world. Please feel free to reach out to us with your suggestions on engaging the Mountain Ecosystems Specialist Group. We are always open to opportunities for collaboration.

Omer Aijazi and Sejuti Basu
Co-Chairs – Mountain Ecosystems Specialist Group

ARTICLE

New Mining Concessions in Ecuador Threaten Biodiversity and Displacement of Communities

by Bitty Roy, University of Oregon
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Ecuador has among the world's highest biodiversity, despite being a tiny fraction of the Earth's land area. The threats to biodiversity and of displacement of hundreds of rural and indigenous communities in Ecuador's Andes and adjacent Amazon regions has dramatically increased since April 2016. During this time the Ecuadorian government has opened over 10% of the country for mining exploration (Fig. 1), with many of the concessions in indigenous territories and 'protected forest' reserves called *Bosques Protectores* (BPs). BPs are privately, or community owned reserves, often quite large (Fig. 1), that are

recognized by the national government but not funded by it, though it is obliged to help stop illegal logging and squatters. Mining is prohibited in government protected areas, which have thus far been interpreted to be only those areas owned by the government, the *Patrimonio de Areas Naturales del Estado* (PANE), leaving the BP's vulnerable.

Most mining concessions were granted to international mining companies, unannounced to the public and without the consent of affected communities as required by both the Ecuadorian Constitution and the United Nations Declaration on the Rights of Indigenous Peoples. Ecuador's largest BP is in the Shuar indigenous territory in SE Ecuador (Fig. 1a), and has been almost completely concessioned. This is where Shuar communities such as Nankints and Tsuntsuim have been forcibly displaced by the government to open access to a Chinese mining company (Brown, K. 2017).

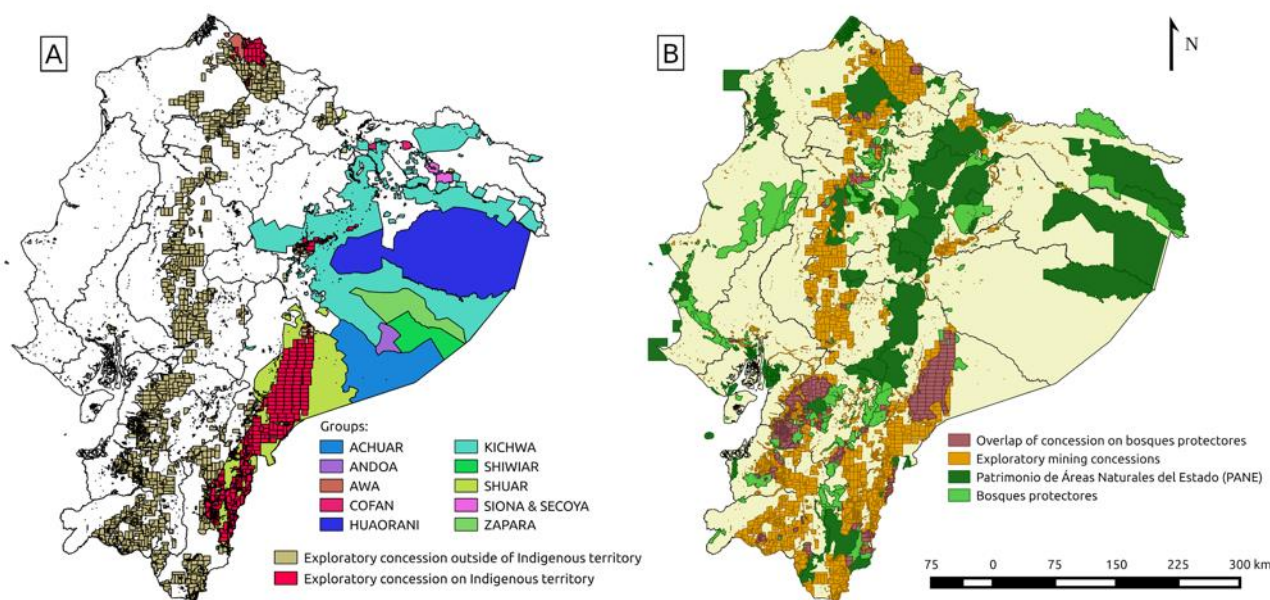


Figure 1 Maps showing the overlap among mining concessions, indigenous territories, and protected areas. In A, mining concessions are shown in gold; estimated territories for major indigenous groups in Ecuador are shown in various colors (see key), and the overlap of concessions with indigenous lands is shown in red. In B, mining concessions are shown in yellow; national protected areas (PANE) are shown in dark green, *Bosques Protectores* (BPs) are in light green, and the overlap of mining concessions with BPs is shown in purple. The government has recently annulled some concessions (often ones that had no mining interest), but they have not updated their website, so these maps are approximately but not perfectly correct.

Fig. 1A used with permission from Vandegrift et al. (2017). **Fig. 1B** used with permission from Roy et al. (in revision). Data for concessions are from (Ecuadorian Ministry of Mines, 2017) and data for PANE and BP boundaries are from (Ecuadorian Ministry of the Environment, 2017). Indigenous boundaries are collected estimates from activists, see Vandegrift et al. (2017) for further comments.

Both communities and biodiversity will suffer. BPs serve surrounding communities and the entire country by providing critical ecosystem services such as clean water and through employment related to ecotourism, with the equatorial Andes a mecca for birdwatchers. Many Andean species are endemics with minimal ranges or, in the case of large mammals such as jaguars or Andean bears, require large contiguous habitats to sustain viable populations. BPs cover a wide variety of habitats that protect localized endemics and act as corridors between protected areas, enabling taxa to maintain genetic diversity, recolonize areas where they have gone locally extinct, and respond to climate change and disturbance via migration (Fig. 1b). All of these functions are threatened by mining concessions. Note, for example, how the still federally protected Cotacachi-Cayapas Ecological Reserve in northwest Ecuador (Fig. 1b) is surrounded by concessions, some of which are currently under active exploration in communities such as Junín and in BP Los Cedros. Development of mines will break habitat connectivity and isolate vulnerable species in fragmented patches and, at the same time, require the forced displacement of dozens of rural communities who have long opposed mining.

The degree to which people and biodiversity are affected by mining concessions depends on whether the concessions are further explored and then exploited. Enforcement of regulations is lax and environmental impact analyses are required only for approval from the phase of exploration to exploitation. Since thorough mineral exploration involves road-building and drilling to test for subsurface minerals, even if minerals are not found and exploitation does not occur, roads provide easy access to invasion by illegal loggers, colonists, and land traffickers, resulting in deforestation. As such, opening the Pandora's box of exploration will have devastating consequences for biodiversity, ecosystem services, and local communities.

Recommendation: The BPs should have the same prohibition of mining as the federally-owned (PANE) system. Protection of remaining primary ecosystems in collaboration with local communities and indigenous peoples should be the central pillar of Ecuador's innovative

'**Bioeconomy**' strategy for sustainable development.

Invitation: The authors welcome the collaboration of scientists interested in conducting research to help document and protect these extraordinary and endangered ecosystems, and in supporting the development of Ecuador's Bioeconomy and related [Nature-based Solutions](#) as an alternative to destructive extractivism.

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ARTICLE

A preliminary investigation into food emergency recurrence in Lesotho and its impact on South African border towns

by S J Taylor

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Lesotho is a land-locked, poor and mountainous country surrounded by provinces of South Africa. The United Nations (UN) has rated Lesotho as a 'Least Developed Country.' Lesotho is also a fragile state as per the Fragile State Index by Funds for Peace. Around 85% of the population is vulnerable due to their subsistence livelihoods without much surplus. The people in the highland areas are significantly poorer than those in the lowlands. Because of its somewhat precarious economic status, Lesotho receives significant external donations. The United States government, through USAID, assists in terms of an agricultural production training to prevent food emergencies. UNICEF also contributes funds and expertise to

Lesotho. Other international agencies working in Lesotho include the World Food Programme (WFP), DFID, the British High Commission, the UN Food and Agricultural Organisation (FAO), the European Commission (EC) and non-profits such as CARE. They work largely with the Ministry of Agriculture and Food Security in Lesotho. Despite the efforts of these actors, there is growing vulnerability in Lesotho.

The recent El Nino drought of 2014 - 2017 affected 35 million people in the SADC region including South Africa and Lesotho. Periodic droughts and associated food emergencies in Lesotho are increasing in frequency, preventing rural recovery. In a worst-case scenario, Lesotho's current food emergency pattern can escalate towards a regional 'mega-food emergency.' Impact of a drought-related disaster would not be confined to Lesotho but will be widespread. In this context of recurring food emergency in Lesotho, there is a need to evaluate the preparedness of the South African eastern Free State border towns.

The various pressing issues faced by Lesotho (famines, political turmoil, and labour migration) are rarely covered in the mainstream South African media. Of greater concern, is that the



View of the Maloti Drakensberg mountains from a Free State border town in South Africa. **Photo:** Sue Taylor, AfroMont - Research Network for Global Change in African Mountains

current disaster planning for South African border towns and municipalities do not take into account the growing vulnerability of Lesotho across the border despite much oscillatory movement of the Basotho people from Lesotho into these towns. There are frequent cross border threats such as stock theft and other forms of petty crime, organised crime related to undocumented movements, for example, tax evasion, narcotics smuggling and human trafficking. However, there are many positive aspects such as the seasonal employment of Basotho workers at South African farms. Returning Basotho workers from jobs in distant Bloemfontein and Johannesburg are a key source of revenue to these border towns. However, these grounded realities do not feature in any of the current municipal planning documents.

The regular food crises within Lesotho might be an early warning sign of a 'slow onset' crisis which may affect the greater border region around Lesotho. Rural-urban and cross border migration has been identified as an adaptive strategy for the rural poor to deal with declining rural economies and will be an adaptive strategy for climate change. Within the SADC countries, people are already moving from vulnerable, to more secure,

parts of the region (Mercandalli and Losch, 2017). Already, almost 25% of the Lesotho population (500,000 people) resides or works in South Africa, utilizing various types of formal residence or work permits, or undertaking informal 'undocumented' transit, to augment their livelihoods back at home (Labour Migration Review, 2007). In this way, South Africa acts as a 'safety net' for Lesotho.

Small towns are in decline around the world, and this trend is similar in South Africa as rural people migrate to the big cities. In general small town planning in South Africa focuses on a set of almost constant challenges that come together in these small urban places (HIV, poverty and marginalisation, local economic development, food and water insecurity, lack of electrification, environmental issues associated with urban slums) and not on issues such as climate change. Hence, this less likely, but more severe disaster risk from drought is ignored in the planning for South Africa-Lesotho border municipalities. These towns and municipalities are ignoring their potential vulnerability to drought and climate change, and their current disaster management plans show a lack of disaster planning for anything more likely/severe than frosts or fire within their municipalities.



The mountainous landscape of Lesotho. **Photo:** Vincent Ralph Clark, AfroMontane Research Unit, South Africa

Climate change acts as a ‘threat multiplier’ that makes current concerns, such as water scarcity and food insecurity, more complex and intractable, and ultimately present a tangible threat to regional, national and global security interests. These threats, in turn, could increase forced migration, raise tensions and trigger conflict. Some of the Free State border towns with Lesotho are already struggling with urban unrest linked to poor service delivery and municipal corruption, and these struggles could intensify with climate change and increased cross border migration. Review of the Integrated Development Plans (IDPs) shows that these towns and municipalities steadfastly ignore the potential threat of conflict posed by increased flows of people within the Lesotho-South Africa border region and the broader impact of drought and food insecurity within the SADC region.

An important Lesotho border is the Lesotho-South Africa eastern Free State Province border along the Caledon River and its associated border towns of Fouriesburg, Ficksburg, Senekal, Marquard and

Ladybrand. Ficksburg is one of the border towns experiencing severe internal civic troubles. South Africa now has a history of xenophobic violence, with serious incidents in the large metropolitan areas in 2008, 2011 and 2015. In planning for climate change at both a regional and national level in Africa, including the South Africa-Lesotho interface, the potential for conflict needs to be understood and measures put in place to reduce the likelihood of such conflict. Conflicts are expensive and wasteful and substantially reverse developmental gains.

References

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The majestic Drakensberg mountains that form the boundary between South Africa and Lesotho. **Photo:** Sue Taylor

MEMBERS' UPDATE

Planning Management for Ecosystem Services: An Operations Manual - now available online

by Philip Bubb

Ecosystem Assessment and Policy Support
UNEP-WCMC

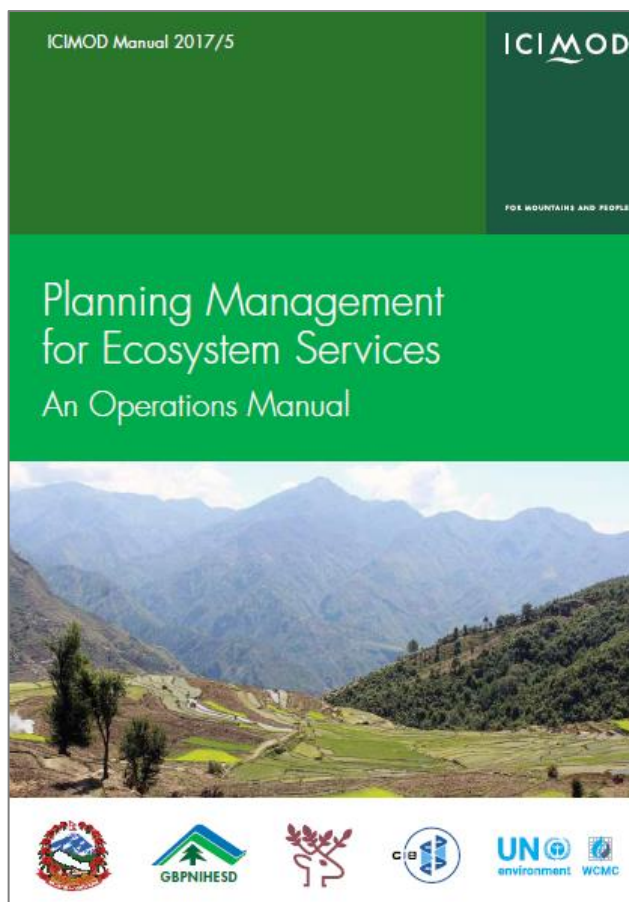
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An Operations Manual is now available online for development practitioners, natural resource managers and conservation professionals to manage the environment to provide multiple ecosystem services. The Manual is a joint effort of the International Centre for Integrated Mountain Development (ICIMOD) with UNEP-WCMC, provides practical approaches to include environmental management for a full range of ecosystem services in plans and actions for sustainable development. It presents six steps and supporting information for working at individual sites and wider landscapes.

Central to its approach is a practical method for understanding and working with the environment as an ecosystem. This is achieved by producing easy-to-understand descriptions of current and desired ecosystem functioning to supply ecosystem services.

The Manual also helps site managers to analyse and address natural resource management problems, such as reduced water supplies, declining populations of species, or the spread of invasive species, and to identify options to increase environmental resilience to climate change. Following a training session on the Manual, a participant from Himachal Pradesh Forest Department in India concluded: "I now see the forest as an ecosystem, not just as timber, and can use this in planning management with local communities."

The Manual is illustrated to support the ecosystem management work of ICIMOD and its partners in the eight countries of Hindu Kush Himalaya, but it is of broader relevance across terrestrial environments of the world.



It can be downloaded at:

<http://lib.icimod.org/record/32857>

For more information regarding the manual, one

can contact Dr. Yi Shaoliang,
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MEMBERS' UPDATE

Survey on Indigenous food systems of indigenous mountain communities

by Dr. Pradeep Mehta

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The Central Himalayan Institute for Nature and Applied Research (CHINAR) in collaboration with Biodiversity International and the Food and Agriculture Organization of the United Nations (FAO), is conducting a survey on Indigenous food systems, involving indigenous mountain

communities in Indian Himalayas. This is part of a global initiative undertaken by FAO, and the research is being conducted across five diverse mountain ecosystems around the world.

The study by CHINAR team seeks to understand the sustainable food system of the Himalayan communities and document them in detail. The survey undertaken in Namik village of Pithoragarh district of Uttarakhand, India, explored the dependence of these mountain communities on natural ecosystems. Traditional practices such as the barter system were documented during the survey. The findings from the study would be shared with FAO by the end of the year.

The Mountain Partnership Secretariat, in collaboration with the Sapienza University of Rome, Bioversity International and the Food and Agriculture Organization of the United Nations (FAO) is organising a Summer School titled “Agrobiodiversity in a Changing Climate - Sustainable production, fragile ecosystems, resilience to global changes.” Dr. Pradeep Mehta, Honorary Chairman of CHINAR would attend the event at Sapienza University, Rome, Italy from 24th September to 5th of October 2018 and share the organisation’s experiences and learnings from the Indian Himalayas.



Glimpses from the indigenous food systems survey being conducted in Pithoragr, Uttarakhand, India. **Photo:** CHINAR Team

MEMBERS' UPDATE

Engaging rural youth in the Himalayan mountains in climate smart agriculture and ecosystem-based disaster risk reduction

by Sejuti Basu

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Outmigration is becoming a distinct trend across the Indian Himalayas. Lack of employment opportunities, poor access to essential amenities and services including for education, water and healthcare, reducing land productivity and increasing frequency and intensity of disasters act as some of the key drivers of outmigration from the mountains. Subsistence farming was the principal occupation in the Himalayan mountains, albeit the disadvantages of small landholdings, short growing season. Family farming is facing new challenges due to increasing weather variability and the onslaught of extreme weather events. Many farmers are opting for migration to hill towns or plains in search of better employment.

The pattern of migration varies across social groups, gender and has also evolved over the years. 13% households in the Indian state of Uttarakhand in the Central Himalayas report themselves as women-headed households (Awasthi and Devnathan, 2016) indicating highly gendered migration and work structure and rise of a 'money order economy.' However, the trends are still changing, and in the recent years, migrations to the plains have started to involve the entire families (Rawat, 2017), with the number of uninhabited or "ghost villages" increasing in these mountains. Social stratification also affects the migration pattern. Permanent migration is emerging as an important phenomenon amongst upper strata social groups for seeking a better quality of life and investing in their children's education. Our recent observations in the field also show that the intensity of outmigration is higher but seasonal or short term in nature among lower caste social groups who are marginal farmers with small plots of land with low productivity, compared to the higher caste farmers who own larger and more fertile parcels of land.



Grassroots weather monitoring stations set up in the Indian Himalayas to provide weather forecasts to farmers and to monitor changes in the micro-climate. **Photo:** Pragya Team

Weather and farm technology extension services have failed to reach the small and marginal farmers in the remote Himalayan villages. Hence, these farm households often face seasonal food shortage and hunger. Pragma (www.pragya.org) is implementing a programme across three Indian Himalayan states of Jammu & Kashmir, Himachal Pradesh and Uttarakhand towards enhancing land productivity and facilitating the small farmers to uptake climate smart agriculture. The programme focuses on rural youth as key change agents by equipping them through rigorous training, ICT based tools on agro-advisory services and linkages with a network of technical support institutions. The youth are trained as 'Agri-Advisors' who provide near at hand extension services to small farmers including soil testing, weather updates, stress tolerant crop varieties and plant protection from pests and diseases.

These youth advisors reach out to farmers in remote villages devoid of phone and internet connections and help them access the offline version of a Digital Crop Advisory pre-loaded on mobile phones and tablets. The Digital Crop Advisory - a Pragma innovation for improving the food security of Himalayan small farmer households, won the ICT for Mountain Development Award (2016). This innovative ICT solution is a key element of Pragma's initiative dedicated to small farmers in remote high altitude villages, which includes a range of essential support services such as timely weather alerts, soil testing, trainings on improved farm technologies, near-at-hand processing facilities, linkages for agri-enterprises and marketing, etc. Female Agri-Advisors are engaged to breach the gender divide and provide essential services to female farmers at their door-step. To enhance farm revenues, linkages are also developed for farming high value medicinal plants and their marketing with large pharmaceutical companies (such as Dabur India Ltd.) engaged as Responsible Trade Network partners. The youth have found a sense of pride in blending new technologies and knowledge in their farming traditions. Sustainable and profitable livelihood options reduce the vulnerability of small farmer families, and address some of the concerns that trigger the decisions to migrate.

Impacts of climate change and severe anthropogenic pressure and uncontrolled

development, are degrading the Himalayan ecosystems. Compromised ecosystem services are increasingly resulting in frequent disasters with associated damage to natural habitats, biodiversity and Himalayan communities. Given these current trends, Himalayan species and critical ecozones are at significant risk, with large-scale habitat-alterations and Himalayan people are likely to experience a rise in disaster-fatalities, and large numbers may become climate-refugees. Pragma has created a youth based network for monitoring indicators for various geophysical and meteorological hazards. They are also trained in monitoring local biodiversity and natural ecosystems across 240 sites in the Indian Himalayas. The programme engages youth in ecosystem-based disaster risk reduction (Eco-DRR) approach where they would monitor the mountain ecosystem health. Based on these findings, the programme would facilitate uptake of 'green development' by the local community and government through afforestation, re-vegetation and induced regeneration along mountain slopes and in floodplains, soil and moisture conservation and slope stabilization through mechanical / bio-engineering structures.

The programme focuses on youth-led evidence based campaigns for encouraging sustainable stakeholder behaviour that would minimize inappropriate land use and natural resource extraction. This is expected to reduce the vulnerability of targeted mountain communities which are at risk of becoming climate-refugees.

UPCOMING EVENTS

Youth Mountain Forum 2018

University of Central Asia

The University of Central Asia's Mountain Societies Research Institute is accepting registrations and contributions for the Youth Mountain Forum – a side event that is being hosted as part of the World Mountain Forum 2018 (23-26 October). The Youth Mountain Forum seeks to engage students and young professionals with a strong interest and background in climate change and sustainable development to serve as

Youth Ambassadors during the World Mountain Forum 2018. Students and young professionals from Central Asia and the Mountain Partnership countries of Latin America, Europe, Africa, and Asia Pacific are invited to submit contributions.

More details at:

<http://www.mountainresearchinitiative.org/en/mri-news/call-for-contributions-youth-mountain-forum-wmf-2018>

UPCOMING EVENTS

Other upcoming events that may be of interest for Mountain Ecosystems Specialist Group Members:

World Mountain Forum 2018

University of Central Asia and
Bishkek, Kyrgyzstan
23-26 October 2018
<http://wmf2018.org/>

Mountains 2018

Lusophony Mountain Research Network, Lumont
Nova Friburgo, Rio de Janeiro, Brazil
11-15 December 2018
<http://cimo.esa.ipb.pt/LuMont/index.php/en/news/artigo/27>

GLOMOS 2018

United Nations International Workshop "Global Mountain Safeguard Research"
UNU Institute for Environment and Human Security and Eurac Research
Bozen / Bolzano, Italy
17-19 October 2018
<http://glomos.eurac.edu>

International Mountain Conference 2019

UNESCO, Mountain Research Initiative (MRI),
University of Innsbruck, Free University of Bozen-Bolzano (UNIBZ)
Innsbruck, Austria
8-12 September 2019
<https://www.uibk.ac.at/congress/imc2019/>

Caucasus Mountain Forum 2019

Caucasus Network for Sustainable Development of Mountain Regions
Ankara, Turkey

Spring 2019

<http://caucasus-mt.net/events/event/64>

CALL FOR PAPERS

The role of culture in transformation towards sustainable development in mountains

The journal Mountain Research and Development has issued a call for papers related to the role culture plays in our transition towards sustainable development in mountains. Notices of intent are to be submitted by 30 September 2018. Full papers must be submitted by 1 February 2019, with publication of the issue expected in November 2019. More details available at:

<http://www.mountainresearchinitiative.org/en/mri-news/mrd-call-for-papers-the-role-of-culture-in-transformation-towards-sustainable-development-in-mountains>

CALL FOR CONTRIBUTION

Critical Approaches to Gender in Mountain Ecosystems

The Mountain Ecosystems Specialist Group regularly documents, and shares case studies and lessons learned drawing from the diverse and vibrant regional experiences of its membership. We invite case studies showcasing successful as well as unsuccessful attempts at integrating critical feminist approaches to gender within ecosystem management practices.

Submissions and queries should be sent to:
mountainecosystemssg@gmail.com

Please mark the subject line as "Gender Abstract". Full length case studies from selected applicants would be due on 1 Nov 2018.

Mountain Ecosystems News

Newsletter of the Mountain Ecosystems Specialists Group



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