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## Brainstorming Workshop on

# Rice Residue Burning in Manipur - Issues and Strategies for Sustainable Management

31<sup>st</sup> January, 2018



Organized by :

**INDIAN ASSOCIATION OF HILL FARMING, MEGHALAYA**

in collaboration with

**ICAR RESEARCH COMPLEX FOR NEH REGION, MEGHALAYA  
& CENTRAL AGRICULTURAL UNIVERSITY, IMPHAL**

Co-sponsored by : **NABARD**, Manipur Regional Office &  
Directorate of Environment, Govt. of Manipur

Venue: **ICAR Research Complex for NEH Region**  
Manipur Centre, Lamphepat, Imphal - 795004

**R**ice residue burning to the tune of millions of tonnes by farmers in north western India in early winter months is a major contributor to air pollution and smog in National capital Delhi and is in news for several years. Crop residue burning is contributing to atmospheric pollution that has serious implications on environment, soil, and human health as well as economy due to release of large amount of air pollutants.



Central and State Governments of the affected States of Punjab, Haryana, Delhi, Uttarakhand and western Uttar Pradesh are working for suitable residue management practices to provide a sustainable solution to the problem of crop residue burning. Recent policy brief of National Academy of Agricultural Sciences (NAAS) address the problem of air pollution due to crop residue burning and provides an innovative and viable solution to check burning of rice residues. In the North East India, significant amount of rice residue are burnt after harvesting and threshing. However, the purpose of burning in Manipur is not same like those of the North Western India where residues are burnt to clear the field for sowing of next rabi crop. Off-late mechanized threshing is on rise in the state of Manipur. Mechanized threshing is mostly done in a corner of field or along the road side and the piled straw are burned after threshing. About 2.2 lakh hectare rice is cultivated in Manipur out of which rice residues from about 60% area (1.32 lakh hectare) is being burnt in the months of November-December after rice harvesting. A preliminary estimate derived an average rice straw yield in Manipur is around 6 t/ha of which about 20 cm standing stubbles are left *insitu* in field which may contribute for around 2 t/ha. Thus, remaining about 4 tonnes of rice residue are being burnt per hectare area and if this happened over 1.32 lakh area, about 5.28 lakh tonnes of rice residue are being burnt every year in Manipur. It is estimated that one tonne rice residue on burning releases 13 kg particulate matter, 60 kg CO, 1460 kg CO<sub>2</sub>, 3.5 kg NO<sub>x</sub>, 0.2 kg SO<sub>2</sub>. So, from rice residue burning in Manipur alone is generating approx. 6864 tonnes of particulate matter, 31680 tonnes of CO, 770880 tonnes of CO<sub>2</sub>, 1848 tonnes of NO<sub>x</sub> and 1056 tonnes of SO<sub>2</sub> every year.

However, this enormous amount of rice residue (4.62 lakh tonnes per annum) can be managed well with the active support of Govt. and other stakeholders of the region and can be used in several useful ways. Rice residue can be used for preparation of compost and vermicompost, as mulching materials, transport cushioning of delicate materials, making feed blocks, bedding material for cattle shed, mushroom cultivation, roof thatching, biogas (anaerobic digestion), as furnace fuel, substrate for biofuel, and paper and pulp board manufacturing etc. In this context, there exists ample possibility and opportunity for the farmers to use economically viable alternative option to residue burning through concurrent use of various environmental as

well as farmer friendly options. National Centre of Organic Farming, Ghaziabad developed a very low cost microbial formulation (waste decomposer, Rs. 20/tonne of rice residue) for enhancing degradation of rice residues (within 40-50 days) and preparation of high quality compost.

With this background in mind, a one day brainstorming workshop on “**Rice residue burning in Manipur-Issues and Strategies for Sustainable Management**” is being proposed to create awareness and deliberate on various issues related to burning and finding sustainable solution for residue management for clean environment. It is also in mind to promote development of entrepreneurship regarding development of feed blocks, transportation cushioning material, secondary agriculture etc. as a possible means for residue management with the active help from State Govt. agencies. The brainstorming workshop is being proposed to be held on 31st January, 2018 at ICAR Research Complex for NEH Region, Manipur Centre by the Indian Association of Hill Farming (IAHF) with active collaboration of ICAR Research Complex for NEH Region, Umiam,



Central Agricultural University, Imphal, Dept. of Agriculture, Govt. of Manipur, National Mission on Sustainable Himalayan Ecosystem (NMSHE), ICAR RC NEHR, Umiam and North East Chapter, Indian Society of Agronomy. Researchers, teachers, State Govt. officials, NGOs and other stakeholders from across the eastern Himalayan region will be invited to attend

the workshop. Few eminent experts from North India in the field of rice residue management will be invited to share their views for sustainable management of rice residues. Farmers representatives from different districts of Manipur would be invited for understanding their real problems with rice residue management and identify viable alternatives and acceptable solutions for sustainable residue management. Interested participants are requested to submit concept paper on any aspect of rice residue management may be submitted to emailed to [anup\\_icar@yahoo.com](mailto:anup_icar@yahoo.com) / [meghais@rediffmail.com](mailto:meghais@rediffmail.com).

Outcome of the meeting will be documented for devising suitable solutions as alternatives to rice residue burning and will be published as policy document for sustainable rice residue management in Manipur and North East India.

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