

rechargeable lithium batteries is a critical appendage which provides primary power sources for long endurance scientific platform. However, the efficiency of flexible thin film photovoltaic cells is generally low (8–14%)⁴. The specific energy, environmental adaptability, storage technology and safety of fuel cells and lithium batteries still need to be improved. In addition, a high reliability energy management system is urgently required. The unconventional energy systems, such as wireless power transmission system, should be studied.

Material. The envelope material has always been one of the most difficult technical challenges for realizing the HASP scale application. The ultra-light synthetic fibres, with high breaking strength need to be developed, and multi-functional film for special environment should be designed.

Airborne equipment and ground facilities. There is a lack of researches on air-

borne equipment and ground facilities for HASP. Existing airborne equipments and auxiliary ground facilities do not suit the platform quite well. Many measuring and test instruments for specific tasks require considerable researches and designs.

The HASP is a new systematic project which involves a lot of basic science theories and technologies. Although some projects have been carried out and tested, many key technologies need to be challenged due to the latest discovered issues in these flight tests. Further studies involving energy, material instruments and facilities should be necessary to promote progress on this matter. These techniques, coupled with basic researches in the field of aeronautics and astronautics, will help obtain desired results on HASP.

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Indian government unveils National Disaster Management Plan, 2016

On 1 June 2016, the Indian government released its National Disaster Management Plan (NDMP), 2016 (ref. 1). The plan is produced by the National Disaster Management Authority (NDMA), which is an apex body for co-ordination and governance of nation-wide disaster management activities in India. NDMP aims to make India disaster resilient and reduce the loss of lives both from the natural hazards and the human-induced disasters. It covers all phases of disaster management, namely, prevention, mitigation, response and recovery. In the plan document, Prime Minister Narendra Modi describes the significance of the plan: ‘The aim of the plan is to make India disaster resilient. It will help to maximize the ability of the country to cope with disasters at all levels by integrating disaster risk reduction into development and by increasing the preparedness to response to all kinds of disasters. The plan takes into account global trends in disaster management. It incorporates the approach enunciated in the Sendai Framework for Disaster Risk Reduction 2015–2030, which is an agreement under the auspices of the United Nations to which India is a signatory.’ This national plan is prepared in continuation of the National Policy on

Disaster Management, 2009. But, NDMP draws the guiding principles from the post-2015 development agenda, i.e. 2030 Development Agenda of the United Nations. The guiding principles of NDMP are explicitly elaborated in its vision statement, which states: ‘Make India disaster resilient, achieve substantial disaster risk reduction, and significantly decrease the losses of life, livelihoods, and assets – economic, physical, social, cultural, and environmental – by maximizing the ability to cope with disasters at all levels of administration as well as among communities’².

The scope of NDMP encompasses all kinds of disasters arising from the natural hazards or from the human-induced disasters. The plan document recognizes eight categories of natural hazards, namely, (i) cyclone and wind (including tropical cyclones and storm surge), (ii) floods, (iii) urban floods, (iv) earthquake, (v) tsunami, (vi) landslides and snow avalanches, (vii) drought, and (viii) cold wave and frost. The human-induced disasters listed are (i) chemical or industrial disaster, (ii) nuclear or radiological emergency and (iii) fire risk (including forest fire). In a table in NDMP document, 15 categories of disasters are listed and the

nodal ministry for management or mitigation of different disasters identified.

The plan document indicates three-tier hierarchy in administering disaster management. From top down these are: (i) national disaster management authority, (ii) state disaster management authority and (iii) district disaster management authority. NDMA is the apex body responsible for laying down the policies, plans and guidelines for disaster management for ensuring timely and effective response to disaster across the country. In addition to the institutions of authority, the country also maintains a National Disaster Response Force (NDRF) and State Disaster Response Force (SDRF) in every state and union territory. NDRF and SDRFs are responsible for rapid action and recovery at the disaster sites anywhere in the country. The responsibilities of capacity building, training and research are performed by the National Institute of Disaster Management (NIDM).

There also exists an advisory institution in South Asia, namely, SAARC Disaster Management Centre, where the Indian government is an active member for disaster risks reduction (DRR) and

disaster management in the sub-region. Several United Nations specialized agencies are also working in South Asia for achieving the targets as laid out in the Sendai Framework for DRR, based on post-2015 development agenda³. NDMP further points out India's commitments as reflected in the UN COP21 Climate Change agreement to combat human-induced climate change: 'the Paris Agreement on global climate change points to the importance of averting, minimizing, and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reduc-

ing the risk of loss and damage'². NDMP, in the national plan, incorporates four priorities for action under the Sendai Framework, namely, (i) understanding disaster risk; (ii) strengthening disaster risk governance to manage disaster risk, (iii) investing in disaster risk reduction for resilience and (iv) enhancing disaster preparedness for effective response and to 'Build Back Better' in recovery, rehabilitation and reconstruction.

While proposing a robust DRR governance framework for the country, NDMP will contribute to better coordination in mitigating climatic challenges, natural hazards and human-induced disasters.

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MEETING REPORT

For the students, by the students – YETI 2016*

Background

Young Ecologist Talk and Interact (YETI) is a unique conference in many ways. It is one of the few conferences in the world and the only one in India which is organized by the students, for the students in the field of ecology and conservation. YETI has no fixed venue and it travels across the length and breadth of India, going where the team of students takes it. The onus of organizing YETI is totally up to a self-made team of student organizers, who come together and propose this to an ever-increasing group of YETI members.

In nearly a decade, YETI has been able to reach students from across the country. And a reference of YETI without reference to its history would not do justice to the amazing story of 'for the student, by the student conference'. YETI was initiated by a group of students from various institutes in Bengaluru who wanted to organize a national level conference on 'ecology, evolution and conservation'. It started off as a Bangalore city student conference in 2008, and it was called Student Meeting in Ecology, Evolution and Conservation Science (SMEECS), organized in National Centre for Biological Sciences (NCBS-

TIFR), Bangalore. In 2009, SMEECS expanded to a true national level conference including students from all over India, with a new name YETI, not only to keep the ecology central to this conference, but also to make it more informal gathering for initiating more discussions and interactions. YETI continues to provide platform to students, scholars and researchers to not only share their experiences in academic field, but also to learn from others during this short conference. It also provides them immense opportunity to interact with other researchers and foster any partnership or collaborations to mutually pursue their desired research in the field of ecology and conservation.

YETI-Delhi 2016

As Delhi is home to a large number of academic, research and action-related organizations, NGOs and institutions working in ecology, behaviour, evolution and conservation, it was considered desirable to host a national level conference in ecology and conservation in Delhi national capital region (NCR). YETI conference was organized at Amity University, Delhi NCR, from 17 to 20 January 2016. It was one of the largest gathering of students and scholars working towards ecology and conservation in Delhi NCR; more than 300 students, researchers and scholars from 16 Indian

states belonging to numerous institutions, NGOs and universities across India participated. These students and scholars presented studies from across the country in the fields of wildlife ecology, behaviour, evolution and conservation. This year, the highlights of the conference were the 22 workshops, 2 panel discussions, nearly a dozen plenaries and popular talks and about 100 presentations and posters.

Plenaries and popular talks

The conference officially commenced on 18 January with a short introduction to the history and concept of YETI by Suhel Quader. The conference started off with plenary and popular talks by many stalwarts and budding wildlife biologists. These included topics related to various challenges and constraints of wildlife conservation, innovative practical mitigation programmes and their implications as well as role of government policies in wildlife conservation and research.

Vivek Menon and Prerna Singh Bindra talked about the innovative methods of conservation action and their insights in the field of conservation. Honnavalli Kumara introduced the gathering to long-term research in primatology. Suresh Kumar shared the success and the challenges related to the long-range migration of Amur Falcons in NE India. Ravi Chellam gave a broad overview about his experience and challenges in translocation

*A report on Young Ecologist Talk and Interact (YETI) conference organized during 17–20 January 2016 at Amity University, Delhi NCR.