

while exercising selection. There is a negative relationship between tillers and survival. If we are to consider survival of the tillers into millable canes as the selection criterion, we would be missing out high tillering and hence high NMC clones. This is the scenario for conventional cultivation. Whether it will hold good when a different crop geometry involving spaced planting of settlings is adopted, is a moot point. This needs investigation and it might be that the situa-

tion may not change drastically. Surely, there will be good survival of the tillers if selection (from early clonal stages) is practised under wide spacing, in which percentage of case survival may not become an important issue.

There is an urgent need to carry out research on this planting methodology by agricultural universities and sugarcane research organizations under the Indian Council of Agricultural Research.

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Green economy: policy framework for sustainable development

The current scenario of economic models threatens our ability to spread prosperity and sustain our planet. Climate change, environmental degradation, unemployment, poverty, insecurity and inequality seem to feed off one another. Poverty and degradation of the environment are closely interrelated. This is especially true where people depend, for their livelihood, primarily on the natural resources base of their immediate environment. With India being a growing economy, there is resistance for sacrificing economic growth for the sake of protecting the environment in the future. The Environmental Sustainability Index (ESI) benchmarks the ability of nations to protect the environment over the next several decades. According to the World Economic Forum¹, ESI of India is 45.2, which ranks the country at 101 among all nations. From the Indian perspective, where majority of the Indians lie at the bottom of the pyramid, live on less than a dollar per day and are not able to meet their basic needs, the challenge is how it can harness the energy resources so as to ensure its energy needs. Moreover, the bigger challenge is to ensure the sustainability of the energy generation for its future generations.

The green economy concept here can be a means to achieve sustainable economic and environmental development. UNEP² has defined green economy as a system of economic activities related to the production, distribution and consumption of goods and services which will result in improved human well-being over the long term, while not exposing future generations to significant envi-

ronmental risks or ecological scarcities. A green economy implies the decoupling of resource use and environmental impacts from economic growth. It is characterized by substantially increased investment in the green sector, supported by enabling policy reforms. The basic idea behind adopting green economy is that it can contribute to achieving the goal of sustainable development by generating economic sustainable wealth, facilitating jobs and using natural resources in an optimal way. Being a new style of economy adaptable to human environment and health, green economy can promote the development of productivity, and bring about changes in the production method, life style and consumption. It can call up human ecological and scientific development awareness and leave a sound base and sustainable resources and environment for the human offspring³.

Developing countries such as India, which are likely to have sectors and infrastructure that have not yet fully matured, can accelerate their economic development by bypassing inferior, less efficient and more polluting technologies and policies used by developed countries. Accelerated economic development does not necessarily mean that it would also correspond to increased greenhouse gas levels. It can be possible to maintain cleaner environment with the use of appropriate fuels and innovative technology. Therefore, government policy should be aimed at acquiring and developing advanced technologies to ensure the shift from fossil-fuel based energy to clean renewable energy. In the long term, developing countries stand to gain the

most by moving towards a more environmentally sustainable path of economic growth. However, without framing proper legislations, it will be difficult to convince developing countries to adopt the green economy concept. The reason is that the transition towards green economy involves expensive technology. These technologies are expensive because our existing methods of determining the cost of a technology do not include the actual cost of damage done to the environment. Once this is taken into account, the green technologies will no longer be expensive vis-à-vis conventional technology and it will be easier for the policy makers to convince the stakeholders to move towards green economy. The accounting of the environmental dimension can only be done once proper legislatures are devised. Bottom-up approach or decentralized energy planning can help in employing the objectives of sustainable green economy. Decentralized planning involves scaling down energy planning to sub-national or regional levels. Recent studies⁴ show that it is possible to meet the energy requirements of all the services that are necessary to promote development and improve the quality of life in rural areas from village to district scale, by utilizing the locally available energy resources such as cattle dung, leaf litter and woody biomass feedstock from bioenergy plantation on wastelands. These types of energy extraction are self-reliant and have low carbon footprints. One of the essential principles to the green development plan is the recognition of the need to involve people in the process of development.

CORRESPONDENCE

The community should obtain control over its resources and affairs through controlling a key aspect of its development, viz. energy supply. It is essentially transferring power (or control) over power (electricity) to the people. There are several examples in India where the local communities have demonstrated their willingness and capacity to manage energy and forestry systems, such as the community biogas electricity in Pura⁵. If sustainable development is crucial for long-term development, sustainable management of natural resources is essential. Promotion of conservation and sustainable management of resources requires

the following conditions: communities living close to a resource, who have a long-term stake and dependence on the resource and who must have full control over the management of that resource.

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Banking on tissue banks for translational research: the first step

Translational research in health sciences depends on the detailed study of human tissue samples. Biomarker discoveries, gene polymorphism studies, target identification and validation are some of the platforms that require a large number of human specimens. Only then these bench results statistically qualify to be translated to be used at the bedside¹.

India, as a country, has moved from being 'affected by the population' to 'driven by the masses'. Setting up and flourishing of the clinical research organizations in the country is a standing testimonial to this fact. The principle of having a high recruitment aiding a successful clinical trial should be taken as a clue for tissue procurement and easing translational research. A national tissue bank bound by ethical, legal and medical guidelines is necessary to coordinate tissue collection and clinical data storage for use in biomedical research. Tissue

samples like serum, urine, ascitic fluid, saliva and skin scrapings can be procured by non-invasive methods, whereas solid tissue samples can be obtained during therapeutic/diagnostic interventions at the surgical and pathological departments. Standard workflows and operating procedures for the collection of fresh frozen tissue samples can be worked out². This will help to procure reliable samples for research. Such a source will soon turn out to be a goldmine in terms of population studies in translational research.

The initiative to set up such tissue banks vests with the government and the research organizations of developed countries carrying out clinical trials in India. Future researchers will primarily be benefited in the following ways: (i) less time would be spent in procuring the tissue samples; (ii) validated results are obtained sooner, and (iii) variation-based

studies could be easily analysed on retrospective samples. All these factors are independently essential for the accurate results to be used in translational research.

Tissue banks are the need of the hour and are crucial to make translational research 'statistically' significant in health sciences. Perhaps, these would be the only banks not affected by the global financial meltdown!

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Bio-piracy of Unani medicine at European Patent Office

Several assets of Unani medicine are available in different languages, including Urdu, Persian and Arabic. These literary assets are easily accessible and are thus susceptible to misappropriation. The Unani system of medicine is being exploited for bio-prospecting. It is often

misappropriated because it is assumed that being in public domain, communities have given up all claims over it.

Bio-piracy of classical Unani formulations for treatment of various diseases is a matter of concern for the last couple of decades. Because of the language barrier

the examiners in patent offices are unable to search this information as prior art. Bio-piracy is a negative term for the appropriation, generally by means of patents, of legal rights over indigenous knowledge – particularly indigenous biomedical knowledge – without compensa-