Ancestral Knowledge and Education for Sustainable Development

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United Nations University – Institute of Advanced Studies
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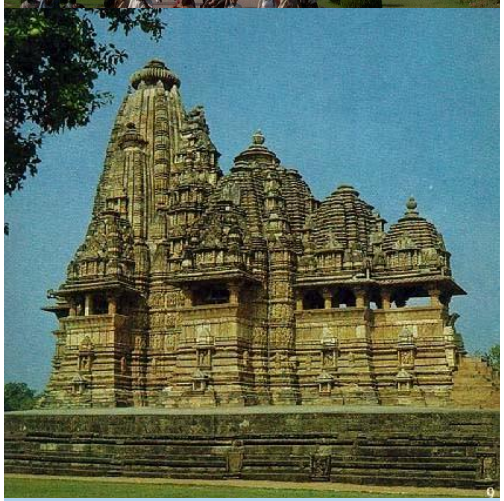
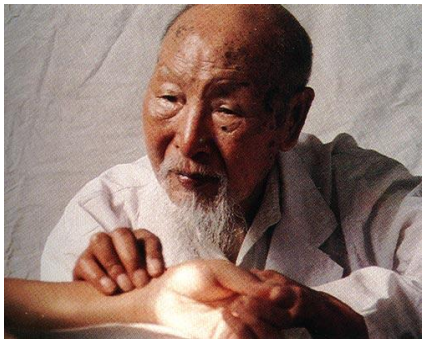
Sequence

- Overview of traditional knowledge
- Multilateral policy perspectives
- Traditional knowledge and ESD
- RCE experience

Overview

- Different cultures around the world with unique practices and ways of looking at life
- Traditional knowledge refers to the knowledge, innovations and practices of local communities around the world
- It plays a vital role in defining the identity of a community or a particular group.

Traditional knowledge

• Traditional Knowledge - “tradition-based literary, artistic or scientific works; performances; inventions; scientific discoveries; designs; marks, names and symbols; undisclosed information; and all other tradition-based innovations and creations resulting from intellectual activity in the industrial, scientific, literary or artistic fields.” (WIPO, 2001)

•Also known as Indigenous knowledge, Cultural knowledge, Local knowledge, Ancestral knowledge, Traditional ecological knowledge – but any of these terms may not capture the exact nature

Codified and Non-codified Forms

- Codified – Systematic epistemology, theoretical framework, codification of traditional wisdom from an emic perspective

- Non-codified – ecosystem and ethnic community specific and highly diverse

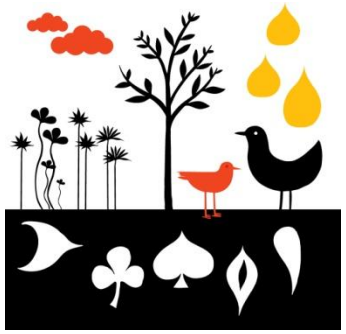
  Though knowledge generation and transmission may vary in different cultures there are several similarities in the worldviews and value systems

Prominent Characteristics of TK

- Diversity, collective ownership guided by customary laws, combined with beliefs and values
- Largely undocumented and orally transmitted forms- many similarities between different communities
- Dynamic, adaptability to changing contexts
- Differing epistemology of traditional and contemporary knowledge
- Not just history, but high contemporary relevance

Role of TK

- Economic and social organization
- Promotes a sense of national cohesion and identity.
- Impacts human wellbeing through contributions to health, agriculture, food security, environmental and natural resource management, land use, livelihoods, disaster management, arts and culture among many others.



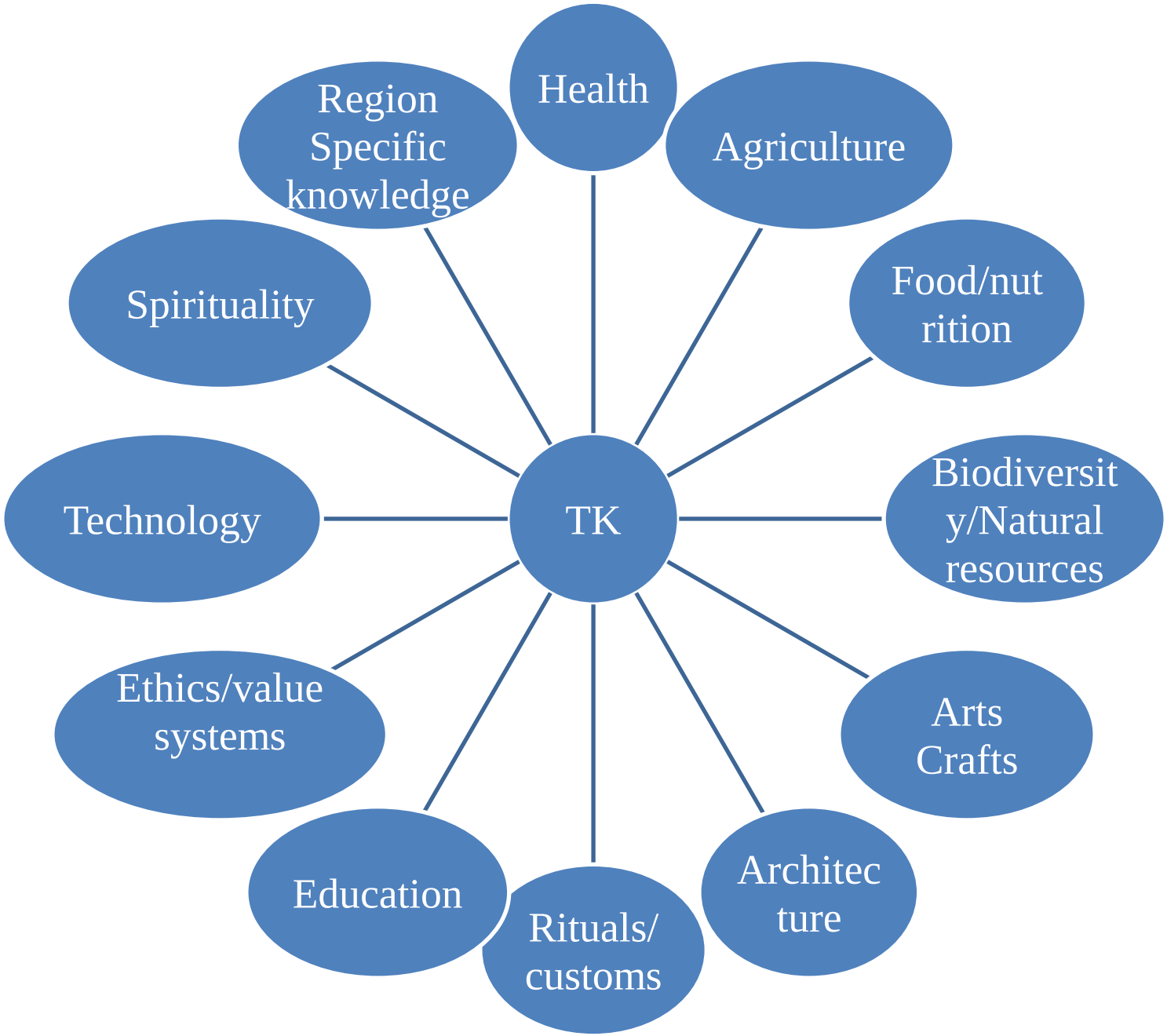
Role of TK – Contd…

- E.g. World Health Organization estimates that traditional medical practices cater to 80% of the world population health requirements.

- Components of local ecosystems (plants, animal and mineral/metal derivatives)

- Locally available, easily accessible and cost effective and highly relevant in primary health care in health access poor regions

Thematic Areas



Multilateral Instruments and Policy Perspectives

Policy	Year	Position
Indigenous and Tribal Peoples Convention (ILO)	1957	Due account shall be taken of the cultural and religious values and of the forms of social control existing among indigenous populations
The International Covenant on Economic, Social and Cultural Rights (OHCHR)	1966	Rights of individuals and peoples to self determination and means of subsistence
Indigenous and Tribal Peoples Convention (ILO) - Revised in 1989	1989	Rights of indigenous peoples to be actively involved in decisions related to their development and their right to continue with their ways of life and choose their priorities.
Convention on biological diversity (CBD)	1992	Calls for the need to respect, preserve and maintain traditional cultures and encourage customary use of biological resources in line with principles of sustainable use and conservation; need to ensure equitable sharing of benefits among TK holders; and the need to obtain prior informed consent of providing parties to access biological resources and related knowledge on mutually agreed terms between the parties.

Policy	Year	Position
UN Convention to Combat Desertification (UNCCD)	1994	Encourages the use and protection of TK related to ecological development - Subject to their respective national legislation and/or policies, exchange information on local and traditional knowledge, ensuring adequate protection for it and providing appropriate return from the benefits derived from it, on an equitable basis and on mutually agreed terms, to the local populations concerned.
International Treaty on Plant Genetic Resources (ITPGR), FAO	2001	Farmer's rights and TK which allows for benefit sharing and participatory decision making on use of plant genetic resources
UNESCO-ICSU Declaration on Science and the use of Traditional Knowledge	2002	Co-existence of knowledge systems and suitable integration for contemporary needs
World Summit on Sustainable Development (WSSD)	2002	Plan for implementation
WHO Traditional medicine strategy 2002-2005	2002	Integration of traditional medicine in health systems, national regulation focused on quality, safety, efficacy, access, rational use

Policy	Year	Position
World Intellectual Property Organization (WIPO)		*Sui generis* model for protection of traditional cultural expressions, traditional knowledge and folklore.
UNESCO Convention for the Safeguarding of Intangible Cultural Heritage (ICH)	2003	Protection of oral expressions, performing arts, social practices and rituals, knowledge and practices concerning nature and universe and traditional craftsmanship.
Convention on Protection and Promotion of the Diversity of Cultural Expressions (UNESCO)	2005	Reaffirms the importance of the link between culture and development
UN Declaration on Rights of Indigenous Peoples (UNPFII)	2006	Right to self determination, and to determine access to their cultures, resources and knowledge
Rio + 20	2012	Reaffirms the role of traditional knowledge in sustainable development

Views on Integration

- These range from
  - romantic (e.g., all practices are logical and sound)
  - Utilitarian (e.g., aspects have to be selectively studied to strengthen modern needs)
  - Pluralistic (should be allowed to co-exist and play a complementary role) views

Common challenges

- Declining social legitimacy (incl. government support)
- Lack of recognition of practices and practitioners, lack of self esteem
- Erosion of knowledge, lack of successors
- Self determination, rights to resources, traditional lands, ownership of knowledge and benefits from use of resources and knowledge, intellectual appropriation
- Incompatibility with mainstream knowledge systems, multiple worldviews of learners, pedagogical exclusion
- Peaceful existence and preservation of diversity

Reasons

- A hegemonic relationship between knowledge systems - TK in a position of having to prove itself through a positivist epistemology – dramatically devalues traditions by universalizing norms of action

- Over emphasis on economic growth - relevance of culture has been examined through the lens of relevance to commercial activity

- Prevailing view of TK as antiquated and non dynamic, relegating it to a status of a commodity that should be documented and preserved.

- Dominant discourse of protection of intellectual property rights while neglecting efforts to strengthen social and cultural processes of continuity.

- TK is considered exotic and confined to indigenous communities.

- A contested idea of relevance in certain sections of society where benefits from modern science and technology are not available or accessible – creating double standards in inequity especially in less developed countries.

Contd.

- Lack of sufficient theoretical approaches for understanding and assessing TK
- Institutionalization of TK - experience-based elements may not be secured
- A dichotomy exists between the formally trained ‘experts’ and the informal ‘knowledge holders’
- Shuttling between modernity and tradition - conflicts of social identity
- Integration into mainstream learning systems and production processes is a challenging task.

TK and ESD – Key Aspects

- Intergenerational, lifelong learning
- Collective, social learning
- Learning in totality
- Appropriate integration in formal learning, building institutional values and methods to provide choices in education
- Constant engagement on contemporary relevance and promotion as active social traditions in vital areas like agriculture, health etc.
- Strengthen linkages to wellbeing and livelihoods

Some questions relevant to ESD

- What is an epistemologically sensitive method to identify and integrate appropriate practices in learning?
- What mechanisms can drive effective social as well as institutional learning processes for ESD that integrates traditional knowledge and practices?
- What challenges are encountered in the institutionalization process of such knowledge systems?
- To what extent can local experiences and models be universalized and thus replicated?
- What is an appropriate intercultural approach in the current education system?
- Can and to what extent traditional knowledge holders participate in the formal educational systems?

RCEs and Traditional knowledge

UNU-Regional Centres of Expertise (RCE) Network

- An RCE is a network of existing formal, non-formal and informal education organisations, mobilised to deliver education for sustainable development (ESD) to local and regional communities.

- A network of RCEs worldwide constitutes the Global Learning Space for Sustainable Development.

- RCEs aspire to achieve the goals of the UN Decade on Education for Sustainable Development (DESD, 2005-2014), by translating its global objectives into the context of the local communities in which they operate.

- There are currently 116 acknowledged RCEs worldwide.

RCEs around the World

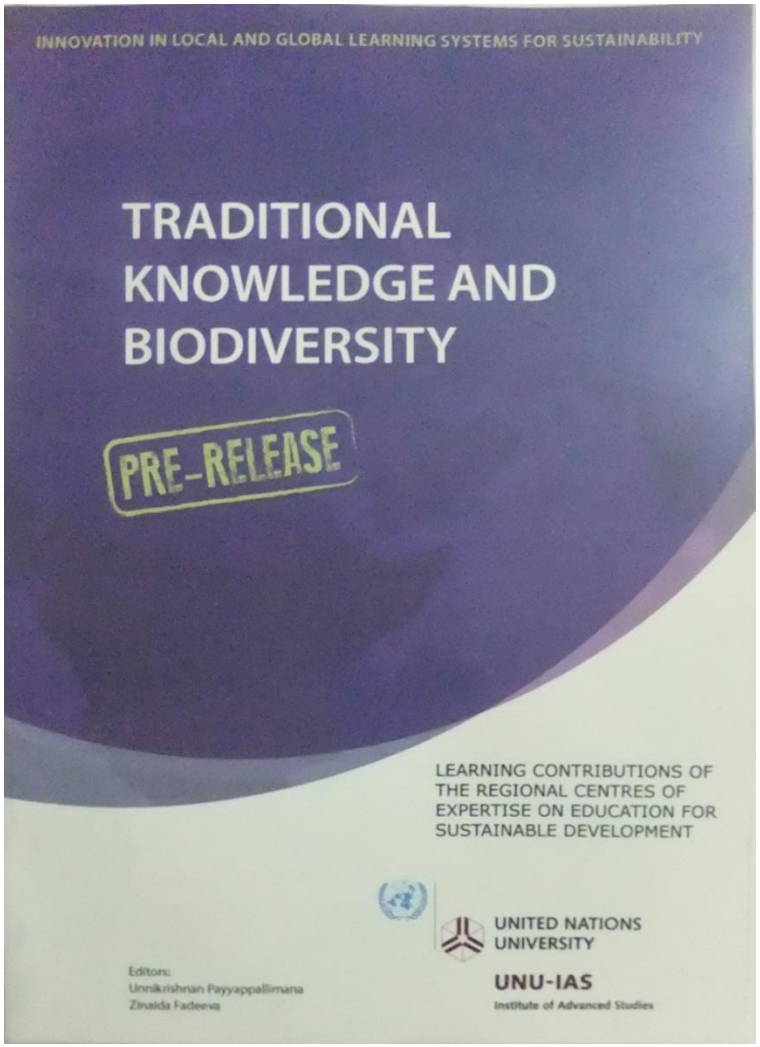
UNITED NATIONS UNIVERSITY
UNU-IAS
Institute of Advanced Studies

For more information
The Global RCE Service Centre
Education for Sustainable Development Programme
United Nations University – Institute of Advanced Studies (UNU-IAS)
Yokohama, Japan
rceservicecentre@ias.unu.edu

- **RCE stakeholders**
  - Schools
  - Higher education institutions
  - Environmental NGOs
  - Scientists, researchers
  - Museums, zoos, botanical gardens,
  - Local governments
  - Local enterprises
  - Volunteers, media, civic associations or individuals etc.

- **Functions of an RCE**
  - Bring together institutions at the regional/local level to jointly promote ESD
  - Build innovative platforms to share information and experiences
  - Promote dialogue among regional/local stakeholders through partnerships for sustainable development
  - Create a local/regional knowledge base to support ESD actors

Traditional Knowledge and Biodiversity: Learning Contributions of The Regional Centres of Expertise (RCE) on Education for Sustainable Development (ESD)



Contents

- 16 RCEs, 18 case studies under sections
  1. Learning for Revitalization of Natural and Cultural Resources
  2. Ecosystem Services and Sustainable Use
  3. Co-engaged Learning Practices for Equity, Livelihoods and Development
  4. Monitoring, Documentation, Protection and Education
  5. Worldviews and Integration

Contributors

Africa

- RCE Makana and Rural Eastern Cape

Americas

- RCE Greater Sudbury, Canada
- RCE Guatemala, Guatemala

Europe

- RCE Espoo, Finland
- RCE Porto, Portugal

Asia

RCE Chandigarh, India
RCE Cha-am, Thailand
RCE Cebu, Philippines
RCE Chubu, Japan
RCE Greater Dhaka, Bangladesh
RCE Greater Phnom Penh, Cambodia
RCE Kodagu, India
RCE Kyrgyzstan, Kyrgyzstan
RCE Penang, Malaysia
RCE Srinagar, India
RCE Yogyakarta, Indonesia

RCE Approaches/Methodologies of TK

- Situated social learning processes
- Learner led mediation processes
- Revitalizing traditional knowledge in life situations through a see-judge-act approach
- Integration of mother tongue education and reinforcing identity
- Bridging research
- Developing learning case modules for capacity development based on good practices

Case Study:
‘Developing Communication Strategy and Tools’ for Conserving Traditional Medical Knowledge and Medicinal Plants Diversity

Indian Himalayan Region (IHR)

RCEs Srinagar, Guwahati, Arunachal Pradesh

REGIONAL CENTRE OF EXPERTISE ON EDUCATION FOR SUSTAINABLE DEVELOPMENT

ACKNOWLEDGED BY

UNITED NATIONS UNIVERSITY

RCE Srinagar


प्रबन्धन समिति झूनी के सदस्यों का नाम-
(2)- तारा सिंह S/O दान सिंह - उपाध्यक्ष
(3)- श्याम सिंह करायत - सचिव
(4)- खीम राम आर्य - वन रक्षक
(5)-श्रीमती- रमा देवी W/O ईश्वर सिंह- सदस्य
(6)- कुन्दन सिंह S/O शोबन सिंह - सदस्य
(7)- भगवत सिंह S/O सूप सिंह - सदस्य
(8)- भूपाल सिंह S/O रूप सिंह - सदस्य
(10)- नारायण सिंह S/O बिशन सिंह - सदस्य
(11) तारा सिंह टाकुली - सदस्य
(12)अमर सिंह S/O मंगल सिंह - ग्राम प्रधान - झूनी

Help Conserve Medicinal and Aromatic Plants!

2013

Know Them | **Use Them** | **Cultivate Them**

Jatamasi
Nardostachys grandiflora

January

Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Status
On the brink of extinction!

Found at
3000 - 5000 metres

Rhizomes and roots used in medicines to treat stomach problems

12th Jan – National Youth Day

Chirayata
Swertiya chirayita

February

Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

Status
On the brink of extinction!

Found at
1800 - 3000 metres

Whole Plant used in blood purifying tonics and to treat stomach problems

2nd Feb – World Wetlands Day
28th Feb – National Science Day

Meetha Bish
Aconitum balfourii

May

Mon	Tue	Wed	Thu	Fri	Sat	Sun
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Status
In danger!

Found at
2800 - 4200 metres

Tubers used in medicines to cure arthiritis

22nd May – International Day for Biological Diversity

Harad
Terminalia chebula

June

Mon	Tue	Wed	Thu	Fri	Sat	Sun
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Status
In danger!

Found at
300 -1300 metres

Fruits, along with fruits of *Amla* and *Baheda*, used in making *Triphala*

5th June – World Environment Day
17th June – World Day to Combat Desertification and Drought

Satwa
Paris polyphylla

September

Mon	Tue	Wed	Thu	Fri	Sat	Sun
30						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

Status
Becoming rare!

Found at
2200 - 3200 metres

Roots used in medicines to treat asthama and intestinal worms

16th Sep – World Ozone Day
28th Sep – Green Consumer Day

Kutki
Picrorhiza kurrooa

October

Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Status
On the brink of extinction!

Found at
3000 - 4500 metres

Rhizomes and roots used in medicines to cure jaundice and stomach ache

1st Monday of October – World Habitat Day
13th Oct – International Day for Disaster Risk Reduction

Globally Significant Medicinal Plants (GSMP)
Medicinal and aromatic plants that are vulnerable to destructive harvesting due to very high demands. A few of these species are also most difficult to cultivate on a large scale.

Flagship GSMP
Some priority species marked for conservation in an MPCA. Each of the 7 MPCAs of Uttarakhand has a set of flagship species. All plants shown in this planner are flagship species.

Medicinal Plants Conservation Area (MPCA)
A network of natural sites or forests demarcated to conserve medicinal and aromatic plants in their natural habitat.

Medicinal Plants Development Area (MPDA)
The area around MPCAs from where medicinal and aromatic plants can be scientifically and sustainably harvested.

Thuner
Taxus baccata

March

Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Status
Becoming rare!

Found at
2100 – 3300 metres

Leaves and bark used in anti-cancer medicines

21st March – World Forestry Day
22nd March – World Water Day

Jeevak
Malaxis muscifera

July

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Status
On the brink of extinction!

Found at
1800 - 3600 metres

Pseudobulbs used as *Ashthavarga* in *Ayurveda*

11th Jul – World Population Day

Hathajadi
Dactylorhiza hatagirea

November

Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

Status
On the brink of extinction!

Found at
3000 - 5000 metres

Tubers used in tonics to treat general weakness

20th Nov – Universal Children's Day

Atis
Aconitum heterophyllum

April

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Status
Becoming rare!

Found at
3000 – 4000 metres

Tubers used in medicines to cure chronic fever

7th April – World Health Day
22nd April – Earth Day

Amla
Emblica officinalis

August

Mon	Tue	Wed	Thu	Fri	Sat	Sun
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Status
Safe!

Found upto
1370 metres

Fruits, along with fruits of *Harad* and *Baheda*, used in making *Triphala*

9th Aug – International Day for World's Indigenous People

Balchad
Arnebia benthamii

December

Mon	Tue	Wed	Thu	Fri	Sat	Sun
30	31					1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

Status
On the brink of extinction!

Found at
3000 - 4500 metres

Roots used in hair and heart tonics

11th Dec – International Mountain Day

Look up these terms!!

In danger! - Vulnerable
Becoming rare! - Endangered
On the brink of extinction! - Critically Endangered
Designations from the International Union for Conservation of Nature Red List of Threatened Species

For further information please contact:
State Medicinal Plants Board (SMPB) Uttarakhand
94, Vasant Vihar, Phase-II, P.O. New Forest, Dehradun -248 006
Telefax: 0135-2769918; Email: undpgefuk@gmail.com; Web: www.herbaluttarakhand.org

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S. Rana
CEE Himalaya
FRLHT, Bangaluru
GBPIHED, Almora
SMPB, Uttarakhand

Government of India
Ministry of Environment & Forests

CEE
Centre for Environment Education

ICIMOD

I-AIM

gef

UNDP

Smpb Uttarakhand

Sustainable Harvest of Medicinal Plants

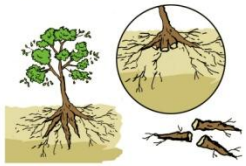
Medicinal and Aromatic (MAPs) are in high demand. However, there is not adequate supply. In order to bridge this gap, MAPs from the wild are being over-extracted for higher profits. This is threatening the existence of the plants. Slow-growing plants with poor regeneration potential are especially being pushed to the brink of extinction.

Therefore, MAPs need to be harvested wisely, meeting our needs of the present and ensuring adequate supply in future. If we harvest plants in a scientific, sustainable and responsible manner, we will have plenty left for the future.

Here are some useful tips for sustainable and scientific harvesting:

For Roots & Tubers

Do not uproot a plant entirely, leave the younger roots and tubers intact so the plant can continue to grow.

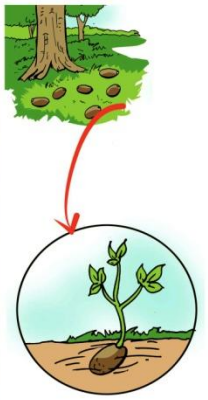


For Twigs/Branches

Do not cut the tree trunk or big branches. Collect only twigs. Allow the tree to regenerate.

For Seeds

Leave some ripe seeds behind. These will germinate to give more trees.



For Bark

Stripping the bark completely exposes a tree to infection, decay, death and stunted growth. Remove the bark only in patches.

For Young Trees

Do not harvest and uproot young trees. Allow them to grow. They will yield higher returns when they are older.

Government of India
Ministry of Environment & Forests

CEE
Centre for Environment Education

I-AIM

gef

UNDP

Gmpb
Uttarakhand

JOURNEY OF A MEDICINAL & AROMATIC PLANTS CULTIVATOR

Wish to cultivate medicinal and aromatic plants?

1

2

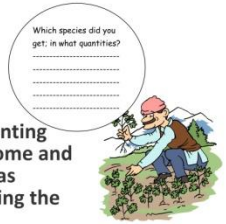
Visit *Jadi Booti Shod Sansthan* (HRDI), Chamoli. HRDI provides information, training, seeds & saplings of medicinal plants free of cost. HRDI has a master trainer available in every district. Call the HRDI, Chamoli office for information on local trainers.

If a cultivator wishes to purchase planting materials from other sources, HRDI offers a 50% subsidy on the total planting costs (includes planting material, water, labour cost etc.). Planting costs for all species are fixed by the State Government.

Center for Aromatic Plants (CAP) and Bhesaj Vikas Ikai also provide planting materials and related services. CAP provides training and planting materials for aromatic plants. Bhesaj Vikas Ikai has coordinators in every district.

IMP: Before leaving, collect registration forms from HRDI as they need to be filled in later and sent back for registration purposes.

3 Take the planting materials home and plant them as advised during the training.



4 Within one month, HRDI / CAP / Bhesaj Vikas Ikai will verify if at least 75% of planting materials have been planted in the fields.

5 If everything is declared to be in order, send the filled-in registration form to HRDI for registration. *No other organization is authorized to give registration certificates.*

6 Resume farming

7 One month prior to harvest, apply to HRDI for Transit Pass. Either HRDI or CAP will visit to determine the expected quantity of harvest

8 Engage in scientific harvesting of produce as directed during the training.

9 Once the Transit Pass has been obtained, the cultivator has 4 options to market the produce.

Approach the *Van Nigam* / HRDI / CAP / *Bhesaj Sangh* / SMPB for guidance regarding markets / interested buyers for both raw material and processed products.

Carry the raw material directly to one of the *mandis* for auctioning.

Sell the raw material directly to a private buyer.

Add value to raw materials (for higher profits) before selling the products to private buyers.

Bhesaj Vikas Ikai & Bhesaj Sangh
8-A, Bengali Library Road, Dehradun, Uttarakhand
Telefax: 0135-2744789

Centre for Aromatic Plants (CAP)
Industrial Estate-Selaqui- 248197, Dehradun, Uttarkhand
Telefax: 0135-2698305
E-mail: cap_selaqui@indiatimes.com

Herbal Research and Development Institute (HRDI)
Mandal – Gopeshwar, Chamoli – 246401, Uttarakhand
Telefax: 01372-254273, 254210
E-mail: director_hrdi@yahoo.in; Web: www.hrdiuk.org

State Medicinal Plants Board (SMPB), Uttarakhand
94, Vasant Vihar, Phase-II, P.O. New Forest,Dehradun -248006, Uttarakhand
Telefax: 0135-2769918; E-mail: undpgefuk@gmail.com;
Web: www.herbaluttarakhand.org

Uttarakhand Forest Development Corporation
Aranya Vikas Bhawan, 73, Nehru Road,
Dehradun - 248001, Uttarakhand
Phone: 0135-2657610 Fax: 0135-2655488;
E-Mail: uafdcmd@yahoo.com,
vanvikas12@gmail.com

State Forest Department Nurseries
Local Forest Division

Herbal Mandis:

Bibiwal Mandi, Rishikesh,
Dehradun – 249201, Uttarakhand
Phone: 0135-2212202
Auction Dates: 7 & 22 of every month

Tanakpur Mandi, Tanakpur,
Champawat -262309, Uttarakhand
Phone: 05943-265794, 265832
Auction Dates: 6 & 19 of every month

Aamdanda Mandi, Ramnagar,
Nainital -244715, Uttarakhand
Phone: 05947-251368
Auction Dates: 15 & 30 of every month

60 **Floating Mandis** across the State of Uttarakhand

Conclusion

- Continuous dialogue process and collective social learning with mutual respect
- Formal and informal educational programs have to be developed for systematic study of local worldviews, perceptions and practices in the wider framework of ESD.
- The formal learning could have a sectoral approach to TK in areas such as in medicine, agriculture, veterinary sciences and so on.
- Informal learning should also focus on means of intergenerational transmission.
- Issues of integration of TK to be addressed at different social levels such as communities, civil society groups, nongovernmental organizations, formal and informal education institutions, local administrative structures, and national and international multilateral and policy forums.

Thank you !

For further information, please visit:

www.ias.unu.edu/efsd

payyappalli@ias.unu.edu