Indigenous Knowledge of Medicinal Plant Use And Health Sovereignty: Findings from the Tajik and Afghan Pamirs

CIIFAD-IARD Seminar

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October 13th, 2010



Acknowledgements

- Participants (in 114 villages) in The Afghan and Tajik Pamirs
- Cornell University (DNR, AIP)
- The Christensen Fund
- University of Central Asia (UCA)
- FOCUS Humanitarian Assistance, Afghanistan
- Mountain Societies Development Support Programme (MSDSP)
- Tajik Academy of Sciences (Pamir Biological Institute)

Contents

I. Context
- Objectives
- Research area

II. Methods

III. Findings and Analysis
- Knowledge of Plant Diversity
- Plant Use Categories and Health Sovereignty
- Food is Medicine: Gathered and Cultivated Plants
- Seasonal Availability and Storage
- Situated Knowledge

IV. Discussion



I. Context: Objectives

Indigenous peoples have the right to their traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals. Indigenous individuals also have the right to access, without any discrimination, to all social and health services.

United Nations Declaration on the Rights of Indigenous Peoples, 2007, Article 24, Section 1.

I. Context: Objectives

Analogous to food sovereignty, the idea of health sovereignty includes the ability to choose medicines that are socio-culturally and ecologically appropriate; thereby, providing practical, reliable, and contextually-relevant health care options.

Denial of self-determination over food and medicine is a repudiation of fundamental rights of autonomy.

I. Context: Objectives

- Show significance of indigenous knowledge of plant use in Afghan and Tajik Pamirs.
- Illustrate medicinal plant use and its relation to health sovereignty under conditions of socio-cultural and environmental change (war).
- Illustrate the link between food and medicine.







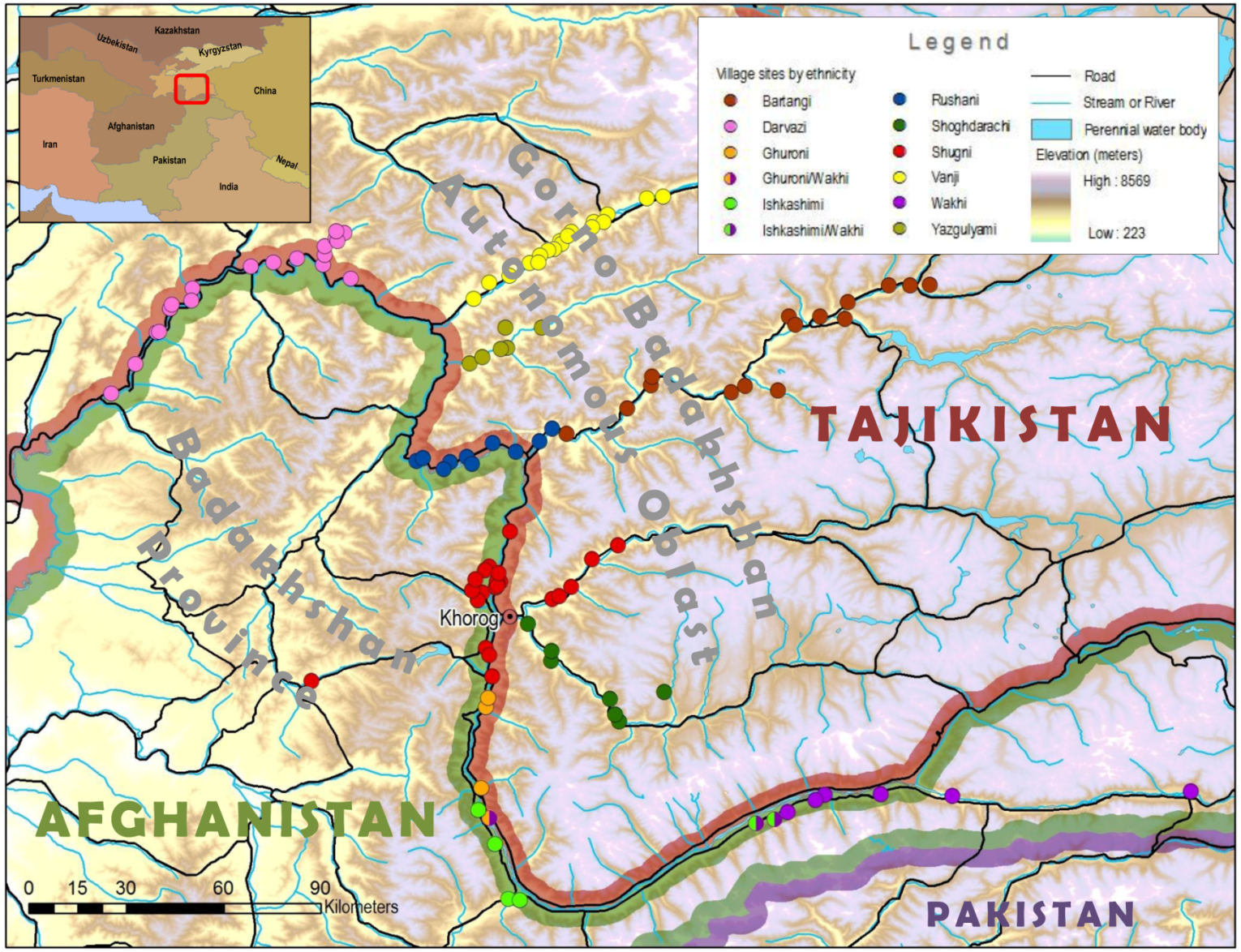


I. Context: Research Area

- Silk Road
- Frontiers of Cold War
- Almost 30 years of a global war localized
- Seismic Activity
- Biological Diversity
- Cultural Diversity
- Climate Change



I. Context: Research Area



II. Methods

Karamkhudoeva/Kassam
634 small group and individual interviews in 114 villages.

Semi-structured interviews

- -Plants use
- -How is it used
- -Fresh or dried
- -What parts
- -When collected
- -Length of storage









III. Plant Use Categories and Health Sovereignty

310 distinct uses of plants in 63 categories of treatment and prevention (Moerman 1998)

Category of Medicinal Use	Number of plants	Percent of all uses
Gastrointestinal Aid	31	10.0%
Dermatological Aid	18	5.8%
Kidney Aid	15	4.8%
Analgesic	13	4.2%
Liver Aid	13	4.2%
Hypotensive	10	3.2%
Cough Medicine	8	2.6%
Cuts, Bruises, and Wounds	8	2.6%
Dietary Aid	8	2.6%
Heart Medicine	8	2.6%
Oral Aid	8	2.6%
Urinary Aid	8	2.6%
Blood Medicine	7	2.3%
Pulmonary Aid	7	2.3%
Respiratory Aid	7	2.3%
Strengthener	7	2.3%
Antidiarrheal	6	1.9%
Diuretic	6	1.9%
Laxative	6	1.9%
Orthopedic Aid	6	1.9%
Toothache Remedy	6	1.9%
Antirheumetic	5	1.6%
Burn Aid	5	1.6%
Dysentery Medicine	5	1.6%
Throat Aid	5	1.6%
Vitamins	5	1.6%
Diabetes Medicine	4	1.3%
Febrifuge	4	1.3%
Gall Bladder Aid	4	1.3%
Gynecological Aid	4	1.3%
Sedative	4	1.3%
Thirst Quencher	4	1.3%

Category of Medicinal Use	Number of plants	Percent of all uses
Adjuvant	3	1.0%
Cathartic	3	1.0%
Cold Remedy	3	1.0%
Eye Medicine	3	1.0%
Purifying Smoke	3	1.0%
Tuberculosis Remedy	3	1.0%
Abortifacient	2	0.6%
Bite Remedy	2	0.6%
Ear Medicine	2	0.6%
Expectorant	2	0.6%
Hemostat	2	0.6%
Insect Repellant	2	0.6%
Lactation Aid	2	0.6%
Pediatric Aid	2	0.6%
Preventative Medicine	2	0.6%
Psychological Aid	2	0.6%
Reproductive Aid	2	0.6%
Stimulant	2	0.6%
Antihemorrhagic	1	0.3%
Disinfectant	1	0.3%
Emetic	1	0.3%
Gland Medicine	1	0.3%
Hernia Medicine	1	0.3%
Malaria Medicine	1	0.3%
Memory Aid	1	0.3%
Mitigate effects of alcohol	1	0.3%
Narcotic	1	0.3%
Poultice	1	0.3%
Spleen Aid	1	0.3%
Sunstroke Medicine	1	0.3%
Vertigo Medicine	1	0.3%
Total Plant Uses	**310**	**100.0%**

III. Knowledge of Plant Diversity

- 58 medicinal plants
- 54 species and 3 genera
- 27 botanical families are represented

Shugni or other local name	Botanical Name	Common English name
amojak	*Ephedra intermedia*	none
anjir	*Ficus carica* L.	fig
anor	*Punica granatum* L.	pomegranate
bobtsuthmak	*Scariola orientalis*	none
charmak, bobak	*Bunium badachschanicum*	none, black cumin genus
chidghints	*Urtica dioica* L.	stinging nettle
choywoxak	*Hypericum perforatum*	St. John's-wort
galshuth	*Hippophae rhamnoides*	common sea-buckthorn
ghithts (Shugni), dulona (Tajik)	*Crataegus* sp.	hawthorn
guli	*Calendula officinalis*L.	pot-marigold
jambilak	*Ziziphora pamiroalaica*	none
khidarmax	*Vicia faba* L.	fava bean
kilak bartangi	*Triticum aestivum* L.	wheat
kilo (Shugni), kadu (Tajik)	*Cucurbita pepo* L.	pumpkin, squash
kirux	*Ferula jaeschkeana*	none
kiznach	*Cichorium intybus* L.	chicory
kuyi pudina	*Origanum vulgare* L.	wild marjoram
limon	*Citrus limon* (L.) Burm.	lemon
lůng	*Eremostachys speciosa*	none
mukholifka	*Leptorhabdos virgata*	none
mun	*Malus* sp.	apple
muthq	*Glycyrrhiza glabra* L.	licorice
nosh	*Prunus armeniaca* L.	apricot
oftobparast	*Helianthus annuus* L.	sunflower
ragakwox	*Plantago major* L.	plantain
shaftal	*Trifolium pratense* L.	red clover
shalkha	*Rumex confertus*	Asiatic dock
shirghorjak	*Melilotus officinalis* L.	yellow sweet-clover

Shugni or other local name	Botanical Name	Common English name
shirgulak	*Taraxacum officinale*	dandelion
shirizm	*Ribes villosum* Wall.	none
shitorthk	*Rheum maximowiczii*	none
sidikhts	*Artemisia sieversiana*	none
sipandůna	*Peganum harmala* L.	harmel
sir	*Allium sativum* L.	garlic
strakhm	*Anaphalis virgata*	none
toji khurus	*Amaranthus* sp.	amaranth
tsextsak	*Artemisia dracunculus*	tarragon
tsirovakvox (Shugni), gazg (Wakhi)	*Sisymbrium brassiciforme* C.A. Mey.	none
tuth	*Morus alba* L.	white mulberry
varx	*Prangos pabularia*	none
withn, withm	*Mentha* sp.	mint
xar	*Rosa canina* L.	dog rose
xarbara	*Rosa corymbifera* L.	none
xarbinj	*Zea mays* L.	corn, maize
xarbit	*Anethum graveolens*L	dill
xaspirukhm	*Ocimum basilicum* L.	sweet basil
xichifkhorth	*Nepeta glutinosa*	none
xikurang	*Impatiens balsamina*	balsam
xipexk	*Arnebia euchroma*	none
xitsit	*Ribes janczewskii*	none
zagher	*Linum usitatissimum*	flax, linseed
zarchoy	*Rhodiola gelida*	none
zarghůl	*Berberis heterobotrys*	none
zarposha	*Tanacetum pseudachillea* C.	none
zhirmesk	*Althaea officinalis* L.	marsh mallow
zhowmisk	*Polygonum coriarium*	none
zira	*Bunium persicum*	black cumin
zirdosk	*Achillea millefolium* L	yarrow

Local, Botanical, and Common English Names

III. Plant Use Categories and Health Sovereignty

The largest plant usage categories (in terms of the number of plants) are:

- Gastro-intestinal aids (31),
- Dermatological aids (18),
- Kidney aids (15),
- Analgesics (13),
- Liver aids (12), and
- Hypotensives (10).

III. Plant Use Categories and Health Sovereignty

Most common reasons for hospital visits in the GBAO included (AKF-T 2008):

- acute respiratory infections (~ 7 Pulmonary, 7 respiratory aids),
- digestive organ diseases (~ 31 gastrointestinal aids),
- heart problems (~ 8 heart medicines),
- injuries/trauma (~ 13 analgesic, 6 orthopedic, 8 wound aids) and
- kidney diseases (~ 15 kidney aids).

Correspondence:

a) Indicative of the frequency of related medical conditions in the Pamirs,
b) Illustrates functional redundancy and resilience capacity, and
c) Re-iterates that medicinal plant knowledge is highly relevant to the health sovereignty of the Pamirs.

III. Plant Use Categories and Health Sovereignty

Change GBOA	2004	2007
Rates of hospitalization	23 %	44 %
Self-treatment of acute diseases	32 %	17 %
Cost of hospital care	189 Somoni	346 Somoni

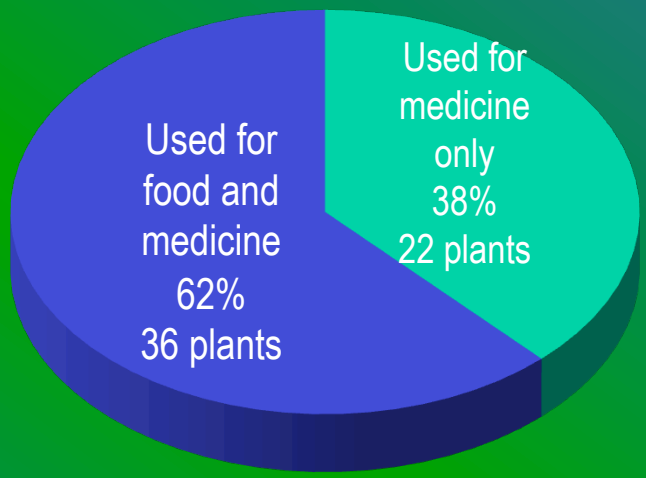
- This may indicate an increasing reliance on institutional health care and consequence for health sovereignty.
- In many regions of Pamir, access to essential medical care, if available, may take as many as 10 days to reach on foot and is costly.

III. Food is Medicine: Gathered and Cultivated Plants

The majority of medicinal plants (62%) are also used for food. In some cases:

- Do not distinguish between use of plant as food and medicine.
- Distinct uses of the same plant as food and as medicine:
  - based on different part of the pant; and
  - based on different use of the same part.
- Use only as medicine.

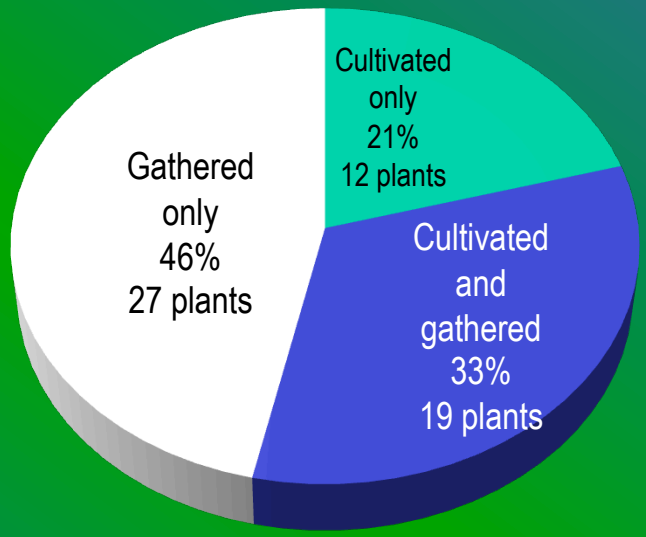
Use of Plants as Food and/or Medicine



III. Food is Medicine: Gathered and Cultivated Plants

- Like food, medicinal plants are both cultivated and gathered (33%).
- Non-cultivated pants are transplanted in gardens or grafted onto cultivated plants (genetic diversity).
- Non cultivated plants used for medicine are found in specific habitats e.g. pastures, riparian areas, etc.

Method Used to Obtain Plants



III. Food is Medicine: Gathered and Cultivated Plants

Relationship Between Plant Uses and Methods Used to Obtain Plants

	Food and medicine	Medicine only	*Total*
Cultivated only	10 species	2 species	*12 species*
Cultivated and gathered	16 species	3 species	*19 species*
Gathered only	10 species	17 species	*27 species*
Total	*36 species*	*22 species*	*58 species*

77% of strictly medicinal plants (not used for food) are gathered and not cultivated.

Indicating healers believe some plants are more potent when gathered rather than cultivated.

III. Food is Medicine: Gathered and Cultivated Plants

Malnutrition is a serious and prevalent condition in the Pamirs.

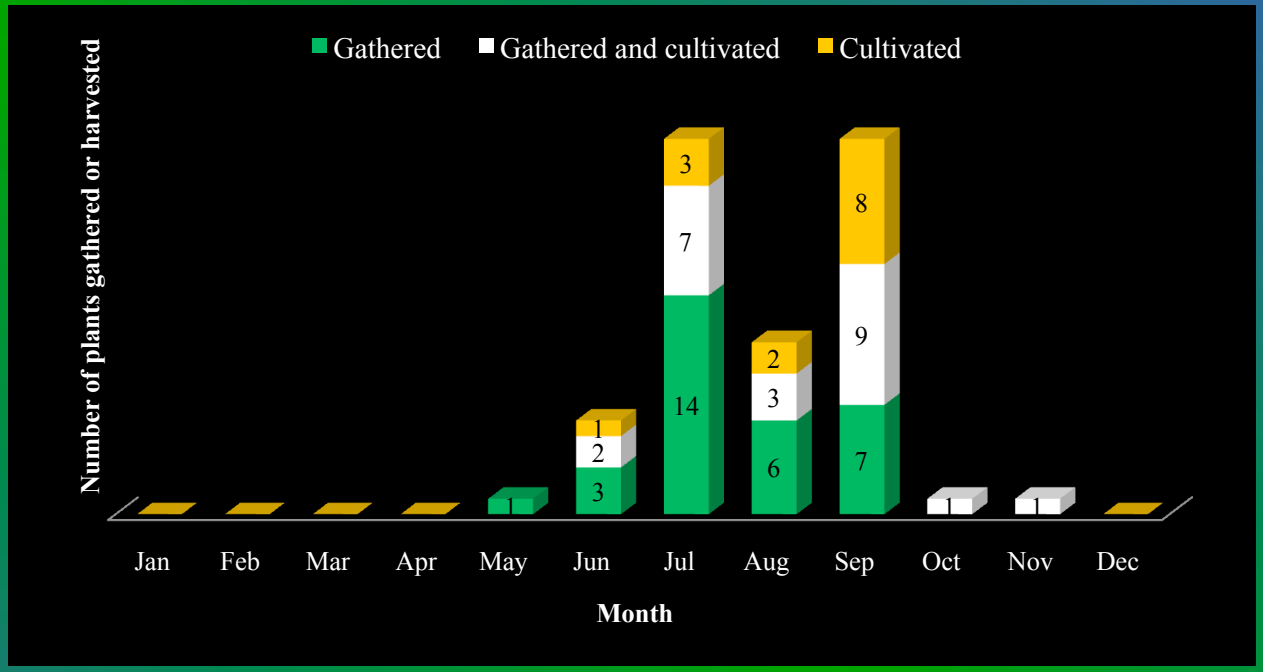
Some plant usage categories relate directly to nutrition and many others are indirectly linked to the body's ability to obtain micro and macro-nutrients.

Anemia is epidemic in the population: 81% of children and 99.6% of women were found to be anemic to some degree (AKF Household Survey 2007).

Several medicinal plant uses include treatment or prevention of anemia as well as diet related disease.

III. Seasonal Availability and Storage

Seasonal Availability of Gathered and Cultivated Medicinal Plants



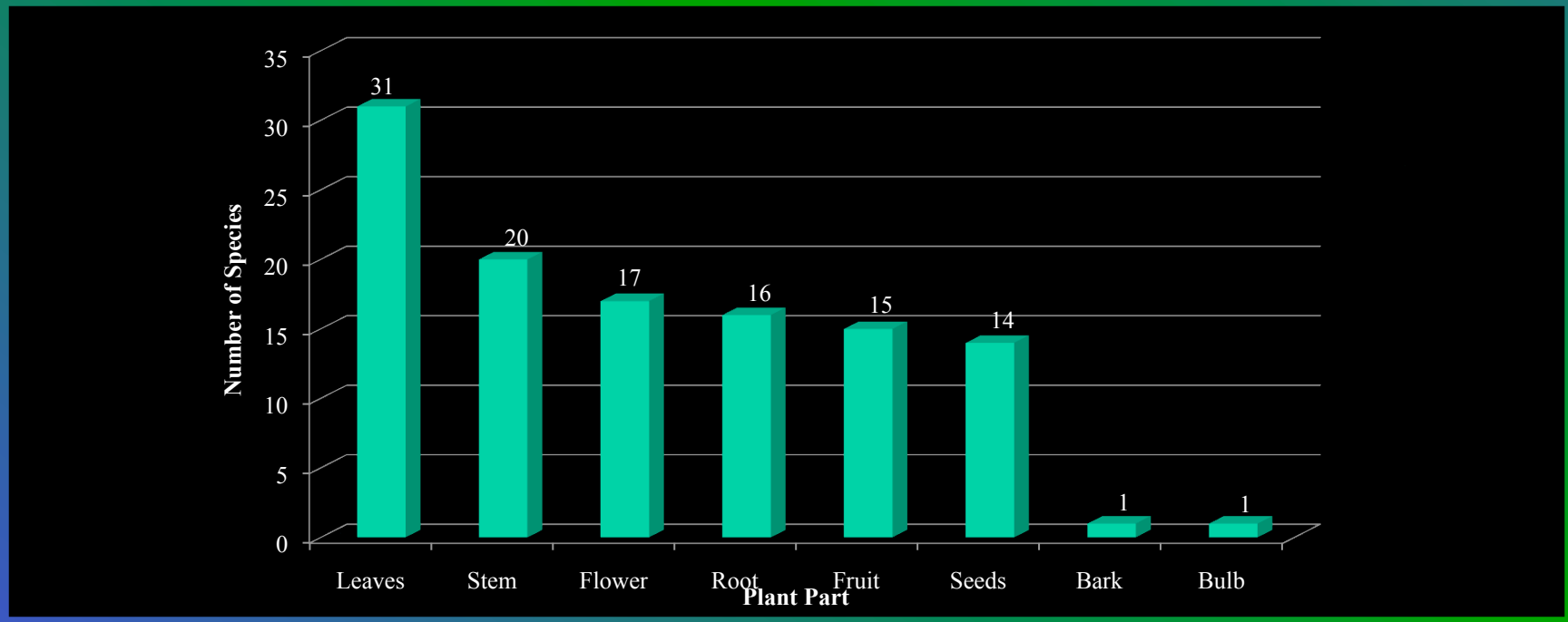
Medicinal plants are gathered or harvested from late spring to autumn with the highest numbers available in July, August and September.

Majority of non-cultivated plants are gathered in July, while the majority of cultivated medicinal plants are harvested in September.

Differentiation in the timing of gathering and harvesting indicates time allocation (e.g. pastures, harvest) and reflects the reality of species availability.

III. Seasonal Availability and Storage

Furthermore, the differentiation may be related to parts of the plants used - since flowers and leaves are available earlier in the year than fruits and seeds



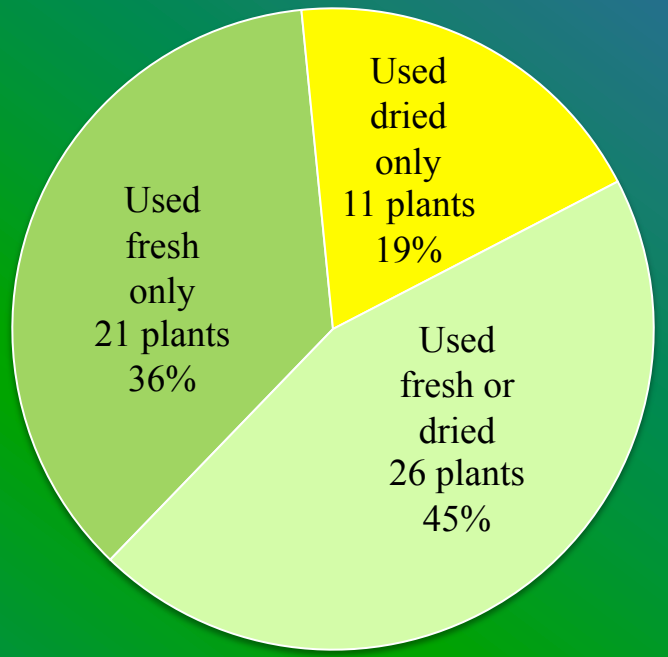
Part of Plant Used for Medicinal Purposes

III. Seasonal Availability and Storage

Constraints on the temporal availability of medicinal plants (not available from December through April) means that they must be stored for later use.

Many medicinal plants are used only fresh but some of these can be stored in root cellars for several months.

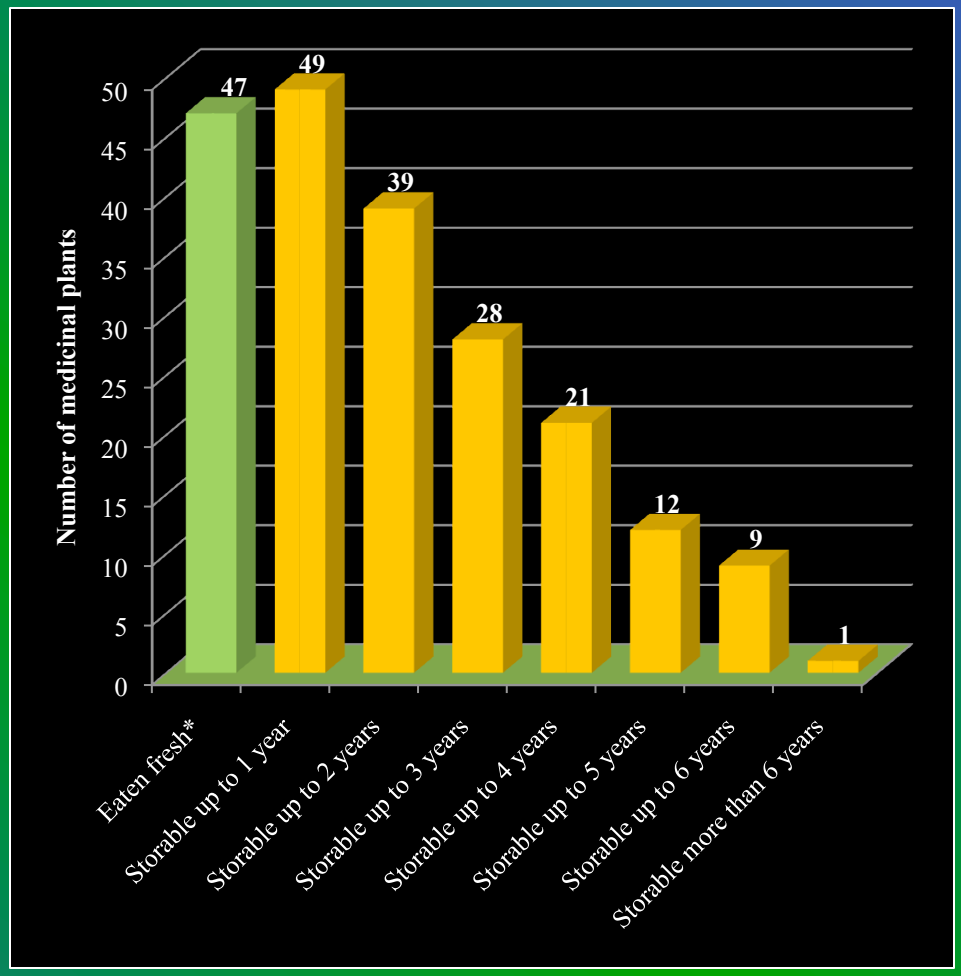
Use of Medicinal Plants as Fresh and/or Dried



III. Seasonal Availability and Storage

The storage ranges from less than one year to more than six years

Storing is a key element of health sovereignty. Drying and storing plants allows Pamir communities to have the majority of their medicines available year-round (periods of uncertainty, unfavorable weather, civil unrest)



Maximum Storage Times for Medicinal Plant Species

* 11 species are used only when dried and are not included in this category

III. Situated Plant Knowledge

- Presence of medicinal plant knowledge is directly related to use e.g. Basid
- Instances where youth knew more specific knowledge than parents
- Knowledge not embedded in peoples minds but their relations with their habitat e.g. Chandin



IV. Discussion

Plants contribute to health sovereignty by providing important health care options.

In many instances, distinction between food and medicine is not relevant.

The ability to preserve plants plays a key role in health sovereignty.







IV. Discussion

People of the Pamir have maintained knowledge of medicinal plants through periods of socio-cultural and ecological change.

Presence of knowledge about medicinal plants is directly connected to their use

Knowledge is not embedded in people's minds as such, but in their relations within their habitat.







IV. Discussion

While medicinal plants are an important source of health sovereignty, they may not be sufficient.



IV: Discussion

Further research into Pamiri Health Sovereignty :

- Engagement with *in situ* centers of learning in Central Asia.
- Opportunity to understand differentiated medicinal plant uses throughout the Pamirs (ethnicity, eco-zone).
- Significance of medicinal plant trade.

