

Livelihood Studies on Willow Dependent Communities of Indian Trans Himalayan Region with Emphasis on Sustainable Management of Bioresource and Better Well Being

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Indian Trans Himalayan and Adjacent Region

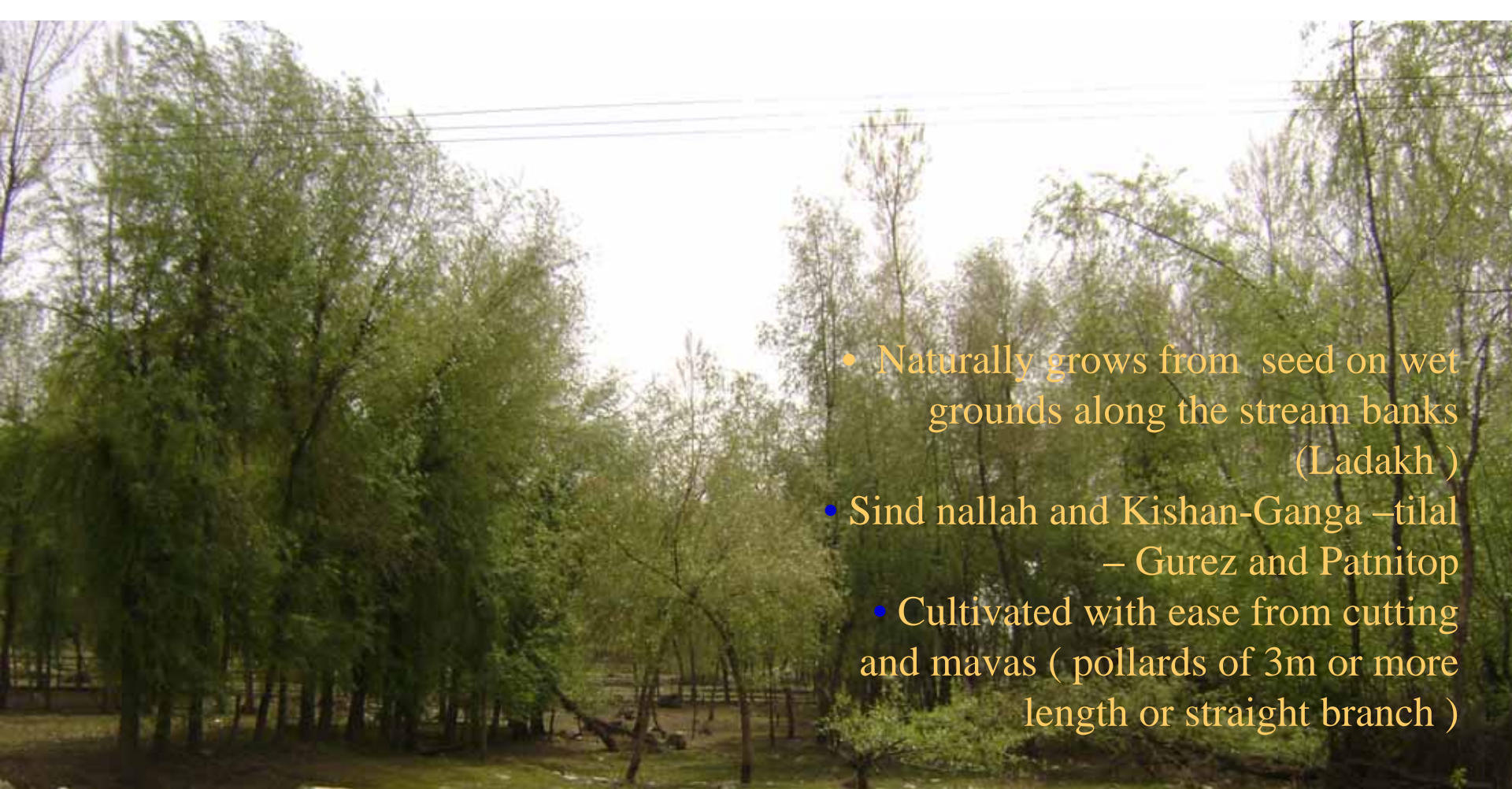
- NW Himalayas
- Ladakh Mountains
- Tibetan Plateau



Willows (Salix) in India

- 27 spp. out of 300 world over
- Indian Himalayas: 24
- Tropical to cold desert of Ladakh
- -20 to 40 degree C
- Precipitation 1000-3500 mm

Leh valley of Ladakh (cold desert) with willows and poplars



- Naturally grows from seed on wet grounds along the stream banks (Ladakh)
- Sind nallah and Kishan-Ganga –tilal – Gurez and Patnitop
- Cultivated with ease from cutting and mavas (pollards of 3m or more length or straight branch)





Morphological and phenological variability

- Tree to shrubby forms
- Branching vertical to pendent

Salix wallichiana – Golden yellow

S. purpurea – Purple black

S. pentandra – Single red

S. repens – Mint green or creeping

S. amygdalina – Blue willow



Willows of Indian Himalayan Region

- Tree species of willow
- Hardy
- Survive subzero temperature
- Extreme wind conditions



Monumental trees of Willow

- growing in rural back drop of the region
- 9.15 m GBH : Chok-Than village (Ladakh)
- 10.25m GBH : Puyan village, Kargil

Needs conservation measures on trees and genetic characterization for development



Improvement of Willows in the Region Depends upon:

- **Forms**
- **Natural hybridization**
- **Agro-forestry**
- **Workable properties for utilization**
- **Value addition**



Traditional Approach and Method

- Development of the resource
- Conscious and sub-conscious selection
 - planting
 - utilization to small scale
- For gains through marketing
- Aesthetics and design

Grading of Willow Stick by Communities

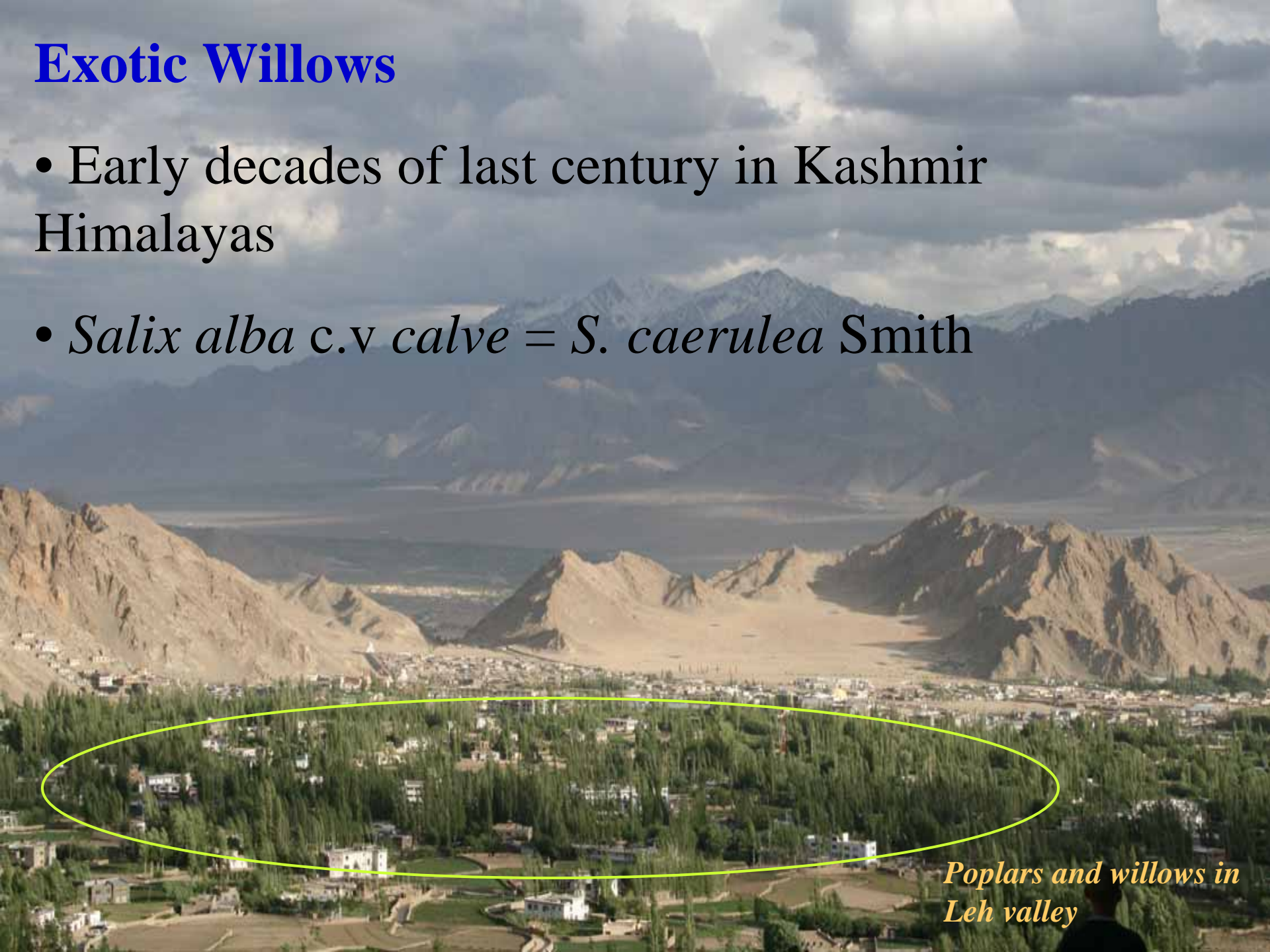
Stick (Osier) # Skin # Panshor # Darmiyan
Caneskin # Diasur # Cake punshur

Nearly 4000 workers of rural communities characterizing, standardizing, adding value and setting willow based market for the past 10-50 years to develop innovative and geographically indicated variety of products which convey assurance of quality and distinctiveness of willow-based engineered goods and novelties.

- Continual improvement in quality by communities

Exotic Willows

- Early decades of last century in Kashmir Himalayas
- *Salix alba* c.v *calve* = *S. caerulea* Smith



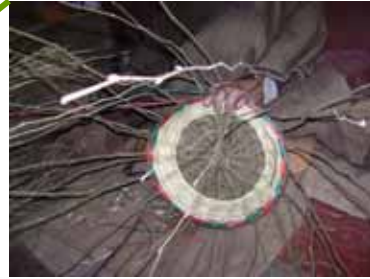
*Poplars and willows in
Leh valley*

Uses of Willows in NW Himalayan and Trans-Himalayan Region

- Better known to the communities
- Lesser known to us



- *Kangri* (fire pot) from twigs, chips etc to overcome severe winter



Wicker works for the manufacture of baskets



Salix dickymat (watal kani)

S. daphnoides (black willow)

S. triandra (Almond willow)



Table trays, Flower vases, chairs and other novelty items





Manufacture of Willow Chair



Basket Making (*Dakri*)



- Other lesser known uses
- Manufacture of common charcoal
- Cattle feed from foliage during lean season

In Pursuit of Making World Class Cricket Bats



- Resilient
- Light Weight
- Durability



Famous Cricket bats of Kashmir

- **Tools Used** : Band saw, kharat , planer etc.
- **Preference** with parallel grain and above seven lines (rings); 15-30 years age
- **Trading Market**: North India [Delhi, Punjab, Meerut]

Name of local Industry / Year of Establishment	Man power	Production per year
Alpha& Co. (1955)	20	40000
Tokyo Style Sports (1957)	25	2000-2500

Good luck Sports Industries (1960)	8 (Man power)	30000 (Production per year)
G.H.D. Sports (1966)	6	12000 -15000
B.S.M Sports (1992)	6	15000-20000
New Sports (2001)	2	1500-2000
M.A. Sports (1996)	3	5000-6000
New Royal Sports (1988)	20	50000
Neelam Sports (1996)	5	6000-7000
Deeso (1970)	12	2000
National Sports Industries (1976)	20	15000 -20000

- Traditional Tools Used
- Need Improvisation



Lifestyles of Willow Dependent Communities

- Weaving jobs about 6 days a week
- 25 days a month and 300 days a year

Hakimgund and *Kachen* (Rural/forest villages of the region) Srinagar District of Kashmir

Out of a total of 95 members of family 33 are working hands

Ice Hockey and Cricket with Willow Sticks and Bats in Leh (Ladakh)

- Tourists' delight
- Earning
- Communities' past time



Some families are involved in weaving for over half a century and recognized for:

- Traits
- Grass root innovation
 - Selection
 - Characterization
 - Cultivation
 - Harvesting
 - Processing



Willow Bioresource providing a Sustainable Livelihood to the Communities

Economic # Social # Environmental

- Income from willow handicrafts and sports goods
- Indian Rupees (INR) 4000 to INR175,13125 (US \$ 100 to 438000 [@ INR Rs. **40** per US \$])
- Total income of as many as 14 families reaches to INR 205,25375=00 [US \$ 513,134]

Need and Priorities

- Integrated , Interdisciplinary approach
- Participation of communities in plantation works
- Transfer of technology and modification of innovations
- Capacity building on upgrading the skills for value addition

- Safe guarding the property rights on indigenous traditional knowledge (ITK)

Paris Convention for the Protection of Industrial Property (Articles 1 & 10), and TRIPS (Art. 22-24) for geographical indications of Goods (Registration & Protection) Act, 1999 (enforced 2003)

- Linking economic derivation of the Indications with traits, Access & Benefit Sharing (**ABS**) and accreditation
- Market sustainability (trends, products for higher income generation) from local to global levels

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Thanks