

UNEP-GEF project
“In situ/on farm Conservation and Use of Agricultural Biodiversity
(Horticultural Crops and Wild Fruit Species) in Central Asia”

Second Meeting of the National Focal Points on ICT
15-17 January, 2008
Tashkent, Uzbekistan

Meeting Summary

The second meeting of Information and Communication Technology (ICT) National Focal Points for Bioersity/UNEP-GEF supported project ‘*In situ/on farm Conservation and Use of Agricultural Biodiversity (Horticulture Crops and Wild Fruit Species) in Central Asia*’ was organized in January 9-11, 2007 in Tashkent, Uzbekistan.

The main objectives of the meeting were to:

- present and get feedback from national partners on the 2nd version of the Crop Wild Relatives - Genetic Resources Information System (CWR-GRIS), designed as the database for entry of the data collected from project sites,
- undertake training on CWR-GRIS use (Setup, Menu, GIS Maps, Import Table, Data Backup and Restore, External Programs, etc.)
- review the best practices for documenting traditional knowledge for further incorporation in CWR-GRIS,
- review and agree work plan on ICT related activities for 2008 within the project.

The meeting’s agenda is attached in **Annex 1**.

The meeting was facilitated by Dr. Kheder Durah, Regional Network Manager / Information Specialist, UMB (Bioersity – CWANA) and Dr. Paul Quek, Scientist, Documentation and Information, DfL (Bioersity– APO). National Focal Points (NFP) on ICT from Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan as well as national partners in Uzbekistan participated in the meeting. List of meeting participants is attached in **Annex 2**.

After the meeting inauguration Dr. Kheder Durah provided GRIS-2 ¹ training to use the following areas:

1. Package introduction.
2. Installation, Setup, Menu, Services, Language Selection.
3. GIS Maps, Contacts, Resources, Taxon, Sites, Accession, Specimen, Population.
4. Import function, Database Backup and Restore, Pick Lists, External Program.

¹ On-line version of GRIS-2 can be downloaded from the project’s web-portal located on <http://forum2.bioersity.cgiar.org/cwana/c.asia> or available on: <http://www.algoit.com/download/CWRGRISSetup.zip>.

The training was conducted as hands-on to allow data entry and functions' usability to all participants covering single user and multi-user environments. The participants' felt that the package was simple enough for them to install and use in single and multi-user environments. The dynamic language translation technology (DLT) allowed users to have full control over the names used for the display of forms and pop-up windows. They felt secured using a reliable database namely firebird as it is open source and its tools are available over the Web, also its management backup/restore is well tested. The "external program" function gave them a new definition of open source, in a way they are not forced to use GRIS-2 tools, but they can develop new tools themselves and include them in this module to become part of GRIS-2 and add value to its functionality as the future needs arises, a fact that contributes to sustainable development of GRIS-2.

After finishing the training, Dr. Kheder Durah and the participants had discussions about the functionalities and technologies used in GRIS-2. After review the software and further discussions National Focal Points suggested and agreed to make modifications in it in order to optimize and increase its effectiveness. List of suggested modifications is attached in **Annex 3**.

Afterwards, Dr. Paul Quek made presentation on Traditional Knowledge (TK) documentation and generation of related on-farm descriptors (**Annex 4**). He covered in details issues of TK Documentation importance, methods and framework used, community validation of TK, minimum data set required at house-hold level, data collection at community level, using information for plant conservation. After the presentation participants were presented a video-film on best practices for documenting traditional knowledge.

Then Dr. Paul Quek continued presenting the documentation of traditional knowledge in terms of TK diversity, protection, knowledge transmission, maintaining TK in a community, knowledge economy, challenge of TK conservation, data-basing and mapping in knowledge. The presentation is attached as **Annex 5**.

The participants also discussed potential descriptors to be included in the GRIS-2. In particular, such issues as strengths and weaknesses of a variety, identification of available varieties, measurements of diversity, needs to sustain the diversity, reasons for planting the variety, information about the farmer or households, farm and landraces were actively reviewed by the participants. As a result they agreed on a potential descriptor list stated in **Annex 6**.

Meeting participants also discussed the plan of work for 2008, tasking into consideration activities undertaken in 2007, and agreed on the following activities:

- Organize further focus groups discussions to generate a descriptors' questionnaire.
- The questionnaire results to be used for determining the final set of of-farm descriptors.
- Customize GRIS-2 based on this final set.

- Deploy GRIS-2 customized version by Project's stake holders.
- Monitor the use of GRIS-2 and prepare related reports on timely bases.

As the outcomes of the meeting its participants agreed on the following:

1. Agree on the list of modifications to GRIS-2 suggested by NFPs stated in Annex 3.
 - Dr. Kheder Durah to modify the GRIS-2 in accordance with these suggestions by 1 June 2008.
2. Agree on a potential descriptor list to be used in GRIS-2 stated in Annex 6. ICT National Focal Points:
 - provide hands-on training for national project partners upon returning home countries;
 - based on focus groups discussions to generate a descriptors' questionnaires to be used for determining the final set of of-farm descriptors by 1 May 2008;
 - Customize GRIS-2 based on this final set by 1 June 2008;
 - Deploy GRIS-2 customized version by Project's stake holders by 1 July 2008.

Concluding the outcomes of the meeting Muhabbat Turdieva mentioned that the meeting and the training within the meeting was fruitful and helpful for the project's progress. She thanked all participants for their dedication and active participation in discussion.

Dr. Kheder Durah mentioned that this was one of the meeting where all participants worked as one team, all participants worked actively, and all planned activities during the meeting were agreed.

As a result the meeting successfully achieved all its objectives.

UNEP-GEF project
“In Situ/On Farm Conservation and Use of Agrobiodiversity
(Horticultural Crops and Wild Fruit Species) in Central Asia”

Programme of the Second Meeting of ICT National Focal Points Meeting
15-17 January, 2008
Tashkent, Uzbekistan

Venue: Shodlik Palace Hotel, Tashkent, Uzbekistan

<u>Tuesday, 15 January, 2008</u>	
9:30-10:00	Registration of participants.
10:00-10:15	Welcoming speech Muhabbat Turdieva, Regional Project Coordinator, DfL, Bioversity-Uzbekistan
10:15 – 10:30	Meeting opening Kheder Durah, Regional Network Manager / Information Specialist, Bioversity International – CWANA Region, Aleppo-Syria
10:30 – 11:00	CWR-GRIS v2.0 Introduction Kheder Durah, Regional Network Manager / Information Specialist, Bioversity International – CWANA Region, Aleppo-Syria
11:00-11:30	<i>Coffee/tea break</i>
11:30-13:00	CWR-GRIS v2.0 Training (Setup, Menu, Services, Language Selection) Kheder Durah, Regional Network Manager / Information Specialist, Bioversity International – CWANA Region, Aleppo-Syria
13:00-14:00	<i>Lunch</i>
14:00-16:00	CWR-GRIS v2.0 Training (GIS Maps, Contacts, Resources, Taxon, Site, Accession, Specimen, Population) Kheder Durah, Regional Network Manager / Information Specialist, Bioversity International – CWANA Region, Aleppo-Syria
16:00-16:30	<i>Coffee/tea break</i>
16:30-17:30	CWR-GRIS v2.0 Training (Import Table, Data Backup/Restore, Pick Lists, External Programs) Kheder Durah, Regional Network Manager / Information Specialist, Bioversity International – CWANA Region, Aleppo-Syria

<u>Wednesday, 16 January, 2008</u>	
9:30-11:00	Best practices for documenting traditional knowledge. Paul Quek Scientist, Documentation and Information Bioversity International – APO, Malaysia
11:00-11:30	<i>Coffee/tea break</i>
11:30-13:00	Continue Best practices for documenting traditional knowledge.
13:00-14:00	<i>Lunch</i>
14:00-16:00	Discussions with group about CWR-GRIS and on-Farm descriptors and incorporation of traditional knowledge descriptors. Paul Quek Scientist, Documentation and Information Bioversity International – APO, Malaysia
16:00-16:30	<i>Coffee/tea break</i>
16:30-17:00	Continue discussions
<u>Thursday, 17 January 2008</u>	
9:30- 11:00	Drafting recommendations Kheder Durah Regional Network Manager / Information Specialist Bioversity International – CWANA Region, Aleppo-Syria
11:00-11:30	<i>Coffee/tea break</i>
11:30-13:00	Continue drafting recommendations
13:00-14:00	<i>Lunch</i>
14:00-16:00	Work plan for 2008 Kheder Durah Regional Network Manager / Information Specialist Bioversity International – CWANA Region, Aleppo-Syria
16:00-16:30	<i>Coffee/tea break</i>
16:30-16:45	AOB and next meeting date and venue Muhabbat Turdieva, Regional Project Coordinator, DfL, Bioversity-Uzbekistan
16:45-17:00	Closing ceremonies Muhabbat Turdieva, Regional Project Coordinator, DfL, Bioversity-Uzbekistan

UNEP-GEF project
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List of participants
The Second Meeting of ICT National Focal Points Meeting
15-17 January, 2008
Tashkent, Uzbekistan

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List of suggested modifications on the functionalities of GRIS-2

1. Labels' texts sizes to be increased in order to use full name and minimize abbreviations in the field name.
2. Units of measurements to be added.
3. Countries' pick lists to be added.
4. Date pick list with validation to be added.
5. Provide more freedom on the location and order of the menu items.
6. Add "auto-save" functionality during data entry process as the records are big and lots of things might happen to disrupt the computer and data might be lost.
7. Add help function "F1" to include all fields and what, how the correct use of options.
8. Customize GRIS-2 in a way to have in-Situ, on-Farm and ex-Situ programs having background colors green, yellow and blue respectively;
9. Display the work mode on the top of each menu in order to notice the active program (in-Situ, on-Farm or ex-Situ).
10. Add training mode of GRIS-2 in order for new users to be trained without disrupting the live production of the package, also if the current user like to try something but is not sure how to do it or the impact of a particular function, then he can shift to the training mode, try it out, then shift back to live mode and apply it safely.
11. As much as possible, validate the data quality during the data entry phase.
12. Enter the Geographical data in manual and digital interfaces to GPS, PDA.
13. Use the legend of the digital media provided in terms of date and time of capture.

Traditional Knowledge Documentation

P. Quek

Presentation prepared for the 2nd ICT National Focal Points Workshop held at Taskent, Uzbekistan 15-18 January 2008

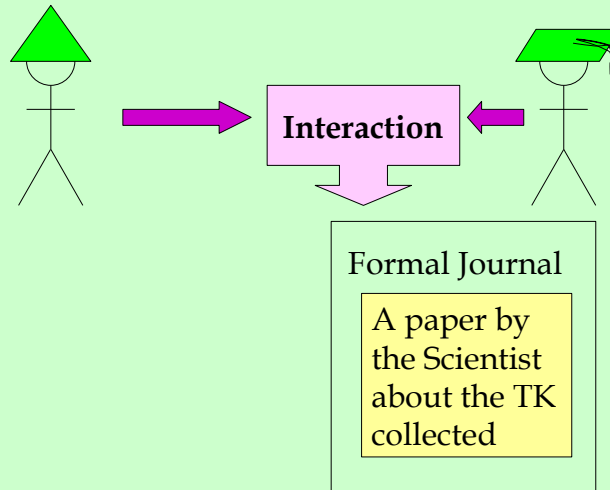
Documenting Traditional Knowledge



It is important that the process is not a one sided approach where TK is studied without gain to the communities

The TK Journal Method

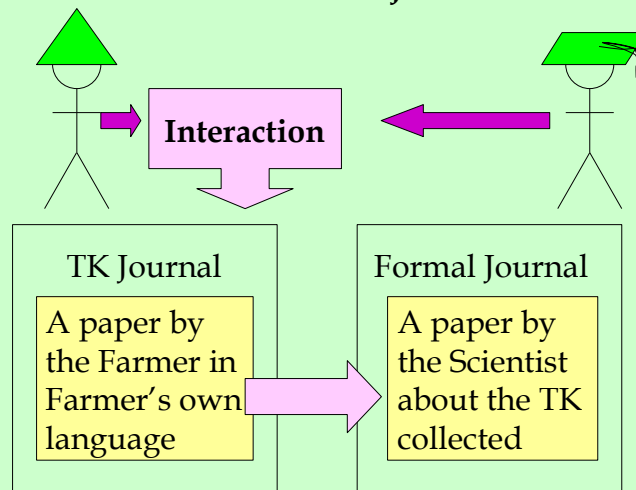
Interaction between Farmer and Scientist



PQuek

The TK Journal Method

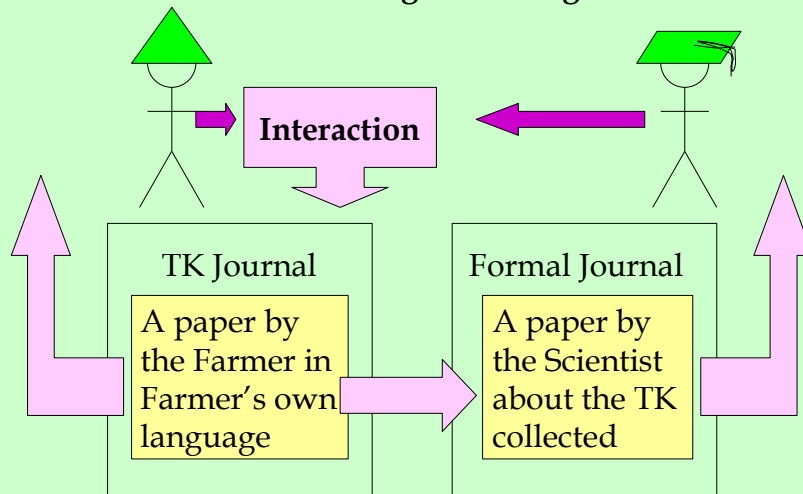
The Farmer's Journal



PQuek

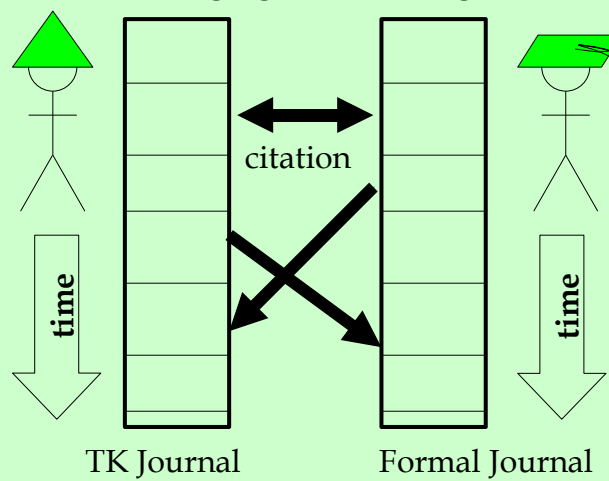
The TK Journal Method

Re-using Knowledge



The TK Journal Method

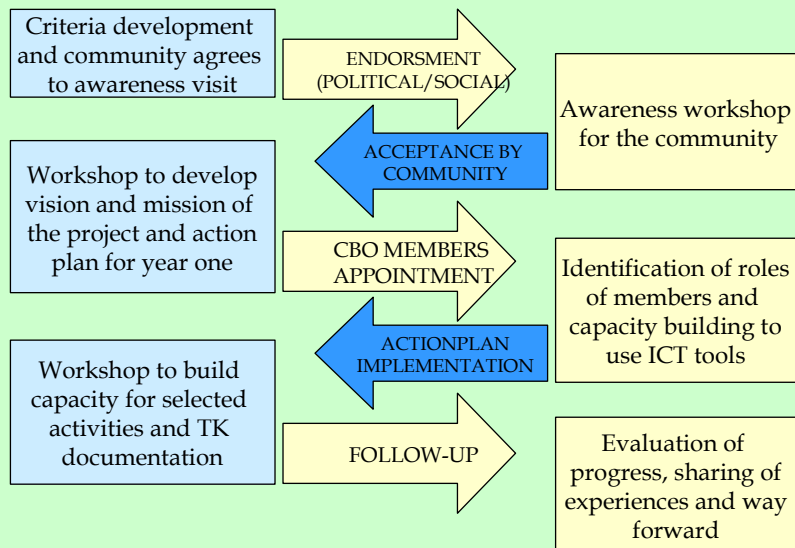
Merging of Knowledge



A missing component

Knowledge holder	✓	✓	✓	
Recipient	✓	✓		✓
Situation	✓		✓	✓
Material		✓	✓	✓
Outcome Knowledge is	a story	not needed	threatened	lost

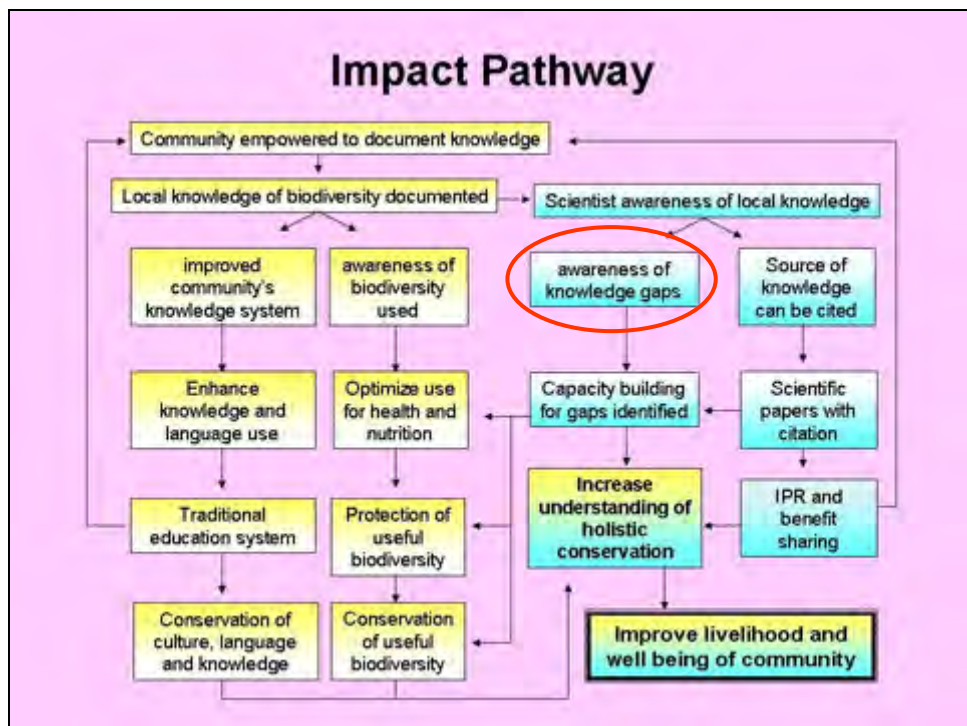
SBC TK Documentation Framework



Members of the Penan community of Mulu learning about field documentation, use of digital camera and pressing herbarium specimens as part of the documentation process on the useful plants used by the community.



Photos: Sarawak Biodiversity Centre



Community Biodiversity Register

- Protection of TK and genetic materials from bio-piracy
- Promoting bio-prospecting
- Monitoring genetic erosion
- Develop local ownership for development and conservation
- Empowerment of communities in biodiversity management and use

CBR consist of records kept in a register by a community of genetic resources in their community and include information on Custodians, Agro-ecology, Culture and Use values

Farmers information database maintained by CBO to keep inventory of agrobiodiversity and traditional knowledge, **monitoring local crop diversity for the community benefits and needs**

Minimum data set required at house-hold level

- What do we have?
- Why do we need to conserve them?
- How do we utilise them?
- What are the values of the materials?
- Who has traditional knowledge and how is it transmitted?
- What are genetic resources that can be shared within and outside the community?
- What are the most valued TK and resources that should be kept as community-specific trade secret?

Data collection at community level

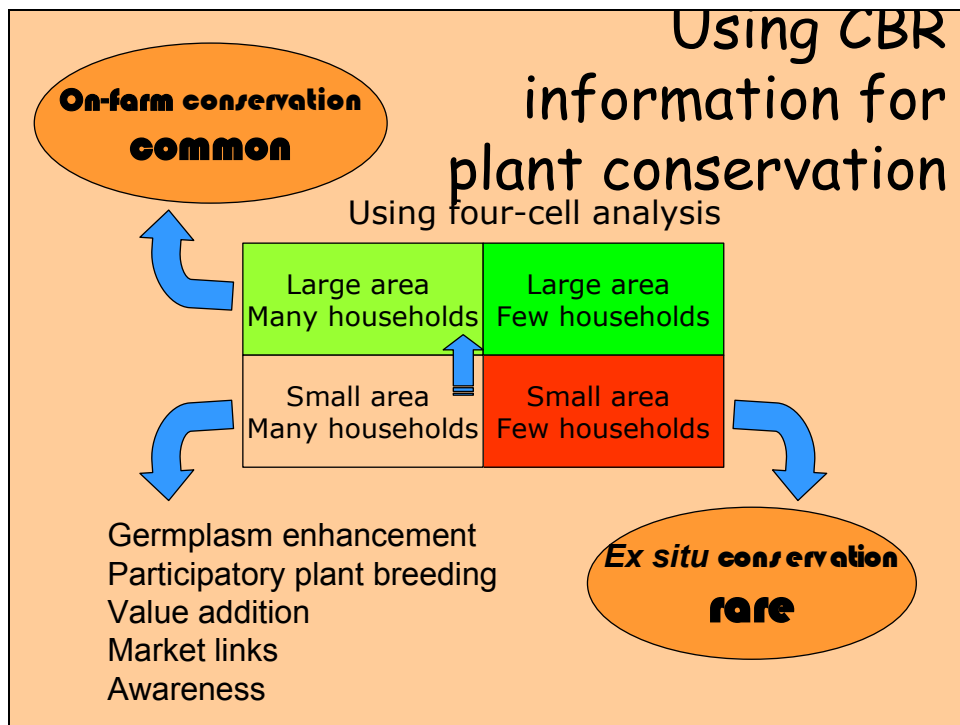
Data measurements need to be applicable to the method farmers used for measurement.

Formal	Community
Yield Kg per ha, Tons per ha	Yield compared to last season more, same, less

Interpretations of the data is possible. Two or more seasons of continuous "LESS" yield would trigger the need to check for problems.

Who to compile the data?

- **Farmer** - I have no time
- **NGO and GO** - no funds to continue
- **School children** - built into school activity e.g. students in seventh grade will complete the class project



Big area		Rumah Lulut			
		Four-cells analysis of Padi varieties			
		Before discussion			
Mawang Mit Pusu Sero Padi campur Mit Leka Pengelish samah Pengelish puru Angit Singut					
Many HH					Few HH
Udun Lentik Anchai Padi wangi Menalam Indon Nyeliah punggo Padi babi Penabar burung Kijang	Banjar Aur Batang Mekam Padi Kayan Pantai Buntih Mashuri Sait Sengkilong Jabong	Padi kumang Sangking Sebulo Wi Padi Alau Bungai Elam Buran Girau besai Padi lalat Padi pun	Adong Padi sedadu Ambun Selang Iemanak Rara Sayap Lajan Danau Kerangan Jinkong	Kusing Seribu Kerisik Entimau Padi Randau Sabai Pingan Nginti Rengat Ngingit Padi nibong	
	Small Area				

Big area >5.5 biscuit tins		Rumah Lulut			
		Four-cell analysis of Padi varieties			
		After discussion			
Mawang Lentik Mit Sero Padi campur Mit Leka Angit Singut Anchai	Menalam Jabong				
Many HH >3					Few HH <3
Udun Padi wangi Indon Nyeliah punggo Padi babi Penabar burung Kijang Pusu Pengelish samah Pengelish puru Padi pun	Padi sedadu Ambun Selang Iemanak	Padi Kayan Batang Mekam Buntih Mashuri Sait Sengkilong	Sebulo Wi Sayap	Kusing Seribu Kerisik Entimau Padi Randau Sabai Pingan Nginti Rengat Ngingit Padi nibong	
	Small Area <5.5 biscuit tins				

Culture and four-cell analysis

- participants were involved in developing the four-cell analyses for rice varieties grown by the villagers.
- Large number of varieties in the Rare quadrant
- When we told the community that these rare varieties are in danger of being lost as only a few plants are planted each time
- They said no, they will not be lost!

Culture and four-cell analysis

- The rice varieties considered by us as rare have cultural significance
- They are the family heirloom very much like a surname for some of us and hence the number of rare varieties indicates the number of families in the community
- The close relationship between culture and plant helps in conservation

Conclusion

- **TK can contribute to science in similar manner Science can contribute to TK**
- **Communities can be empowered to manage their agrobiodiversity e.g. CBR, Participatory plant breeding**
- **Cultural values can promote plant conservation**

Thank you





Traditional Knowledge

Paul Quek
Biodiversity International

Presentation prepared for the 2nd ICT National Focal Points Workshop
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Improving lives through biodiversity research



How much TK?

Language is closely related to the social-cultural practices and in the **oral transmission of TK**

There are over 6900* languages and 95% of it spoken by only 6% of the world's population

= TK diversity and hence amount!

The **extinction** of a language = **lost of the TK** and the associated cultural practices and bio-resources.

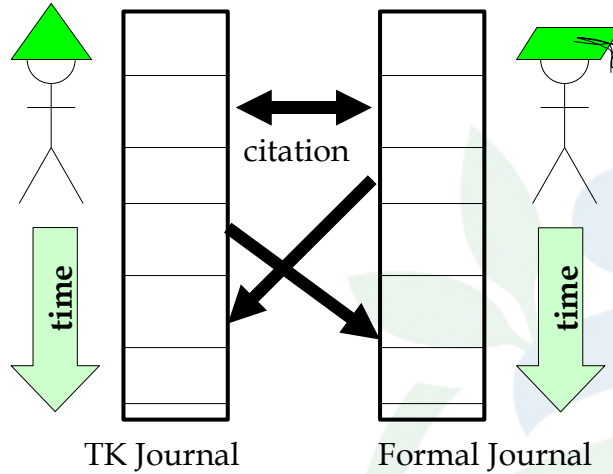
*TK. Language endangerment is a serious concern to which linguist and language planners have turned their attention in the last decade (Ethnologue. 2005).

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The TK Journal Method - documented TK

Merging of Knowledge



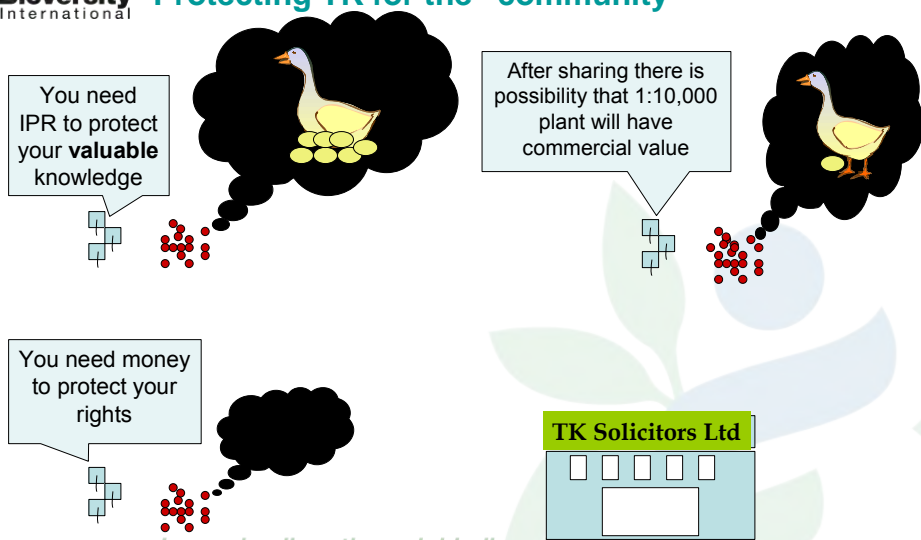
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PQuek



Protecting TK for the "community"

Bird's eyes
By P. Quek

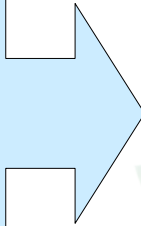


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Oral transmission of Knowledge

Knowledge is embedded in songs, poetry, dances, practices, skills and more....



Knowledge Holder
Recipient
Situation/Time
Material

Where one component is missing knowledge erosion results

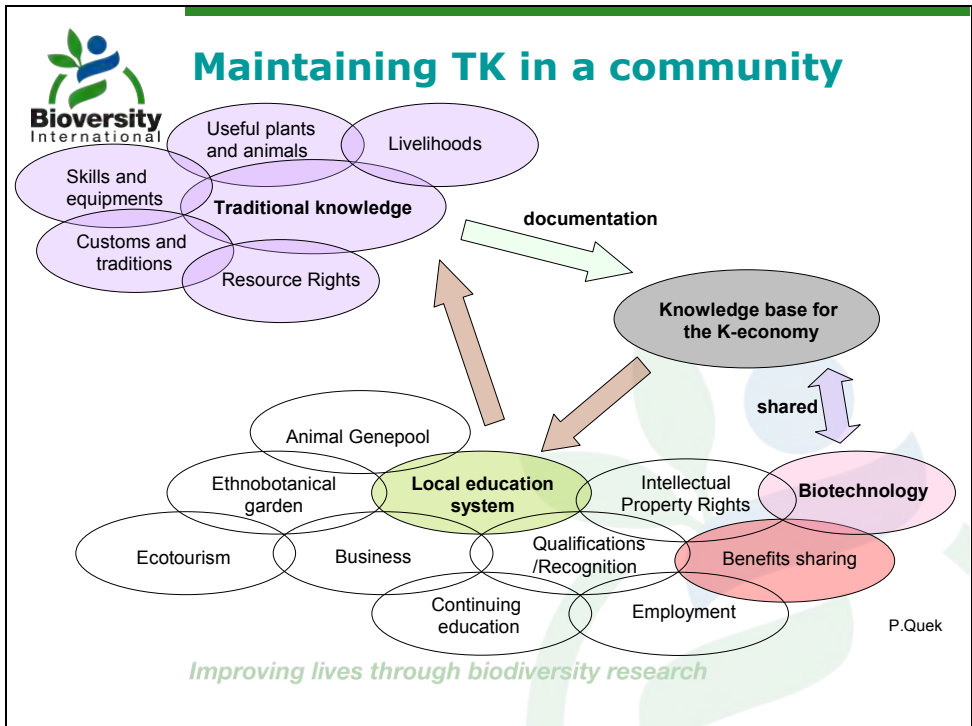
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Protecting knowledge at the community level

Knowledge holder	✓	✓	✓	x
Recipient	✓	✓	x	✓
Situation	✓	x	✓	✓
Material	x	✓	✓	✓
Outcome - Knowledge is	a story	not needed	threatened	lost

Improving lives through biodiversity research



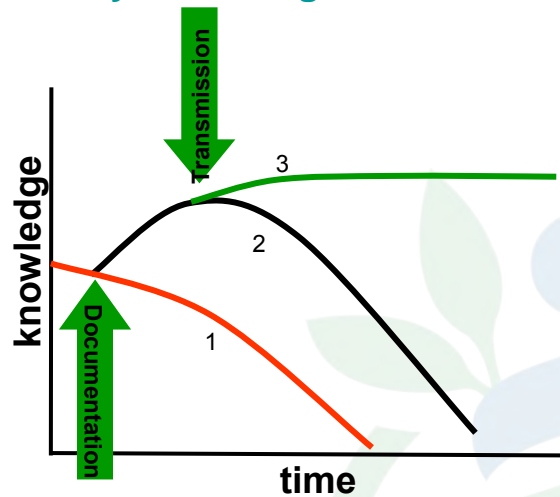
(Developed based on discussion with elders in the community)

Age (years)	Botany (include taboos etc)	Handicraft and skills	Music and culture
4-5		Fishing	
6	70 common plants for food (include drinks)	Flute construction Cleaning of plates, pans and clothes.	Semai children Songs and games
7	70 plants for food	Construction of basket (relong) and trays (Nyimpir) Jungle tracking	Chenteng (Bamboo instrument) Songs
8	70 plants for food	Construction of Pandanus mats and fish traps (3 types)	Bansi (Flute) Songs and Dances
9	25 medicinal plants for common complaints (cuts, burns etc)	Constructing winnowing trays, small animal traps and bird glue	Singset (String instruments) Songs and Dances
10	25 medicinal plants of lesser use	Construction of large animal traps Cooking	Gungou
11	15 medicinal plants for personal health	Construction of blowpipes	Tawak (Gong)
12	15 medicinal plants for personal health	Construction of house and other implements Taping of knowledge	Penyong
13-above	Custodian -community's information		

P. Quek

Proposed Local community education curriculum

Family Knowledge level in a community



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In the study by Ohmagari and Berkes 1997,

half of all bush skills were still being transmitted at the hands-on learning stage
many skills no longer essential for livelihoods, were not transmitted.

loss of certain skills and incomplete transmission of others were attributable to

- changes in the educational environment,
- diminished time available in the bush,
- problems related to learning bush skills at later ages, and changes in value systems.

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Knowledge Economy

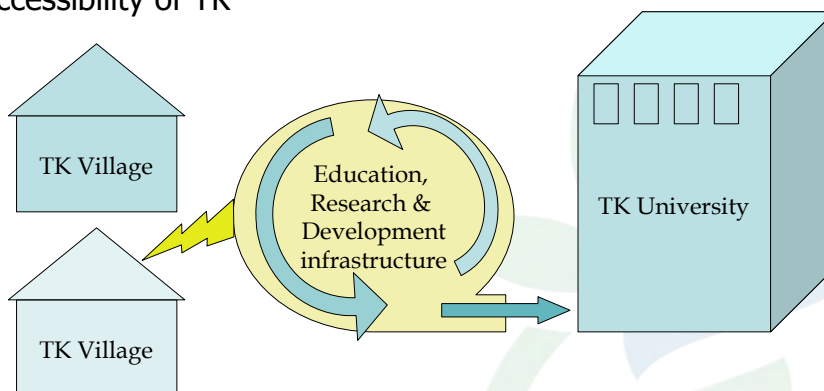
Rural Community	Urban Community
Need to understand scientific knowledge	Need to understand traditional knowledge
Need for modern medicine where traditional healing fails	Need for traditional healing when modern medicine fails
Need to understand modern skills and mass marketing	Need to understand the cultures and traditional skills and ecology management

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Impact pathway with globalization

IPR in relation to TK
Accessibility of TK



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Challenge of TK conservation



Will the younger generations have the same knowledge as the elders in the community when they take over the roles of the elders?

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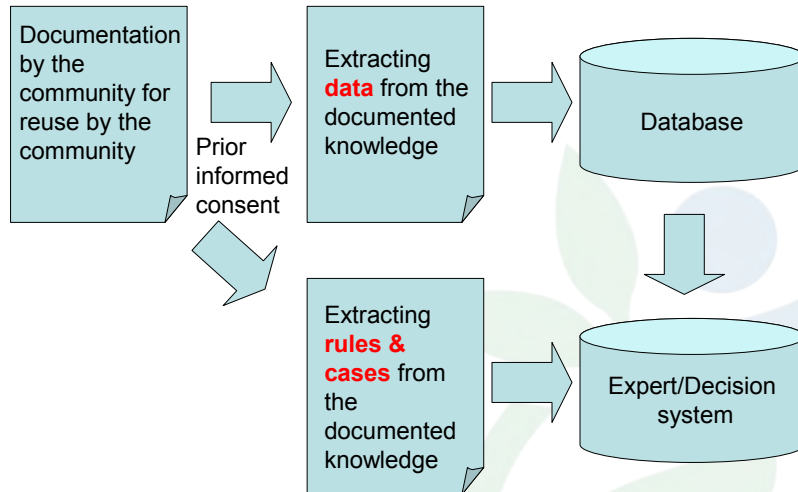
Knowledge and database?

- TK is usually an oral tradition
- Many linkages to many themes (conservation, spirituality, culture, language, etc)
- Linkages to objects can be multiple and not easy to set it as data items
- Some TK are rules that can operate on multiple data

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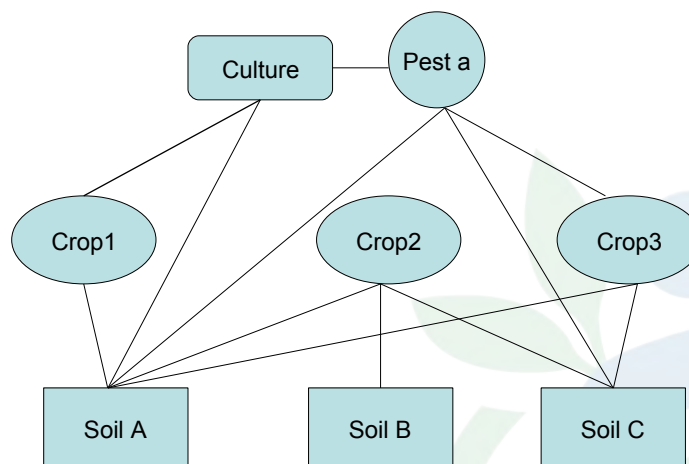
Expert System & Database



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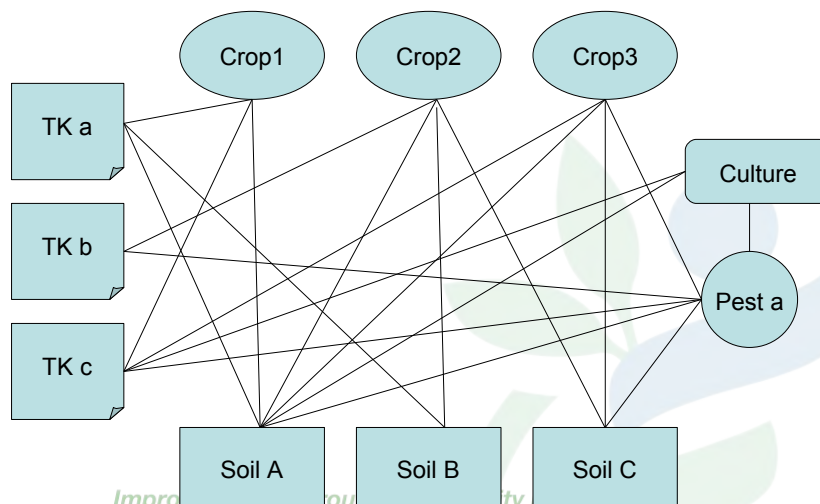


Relationships



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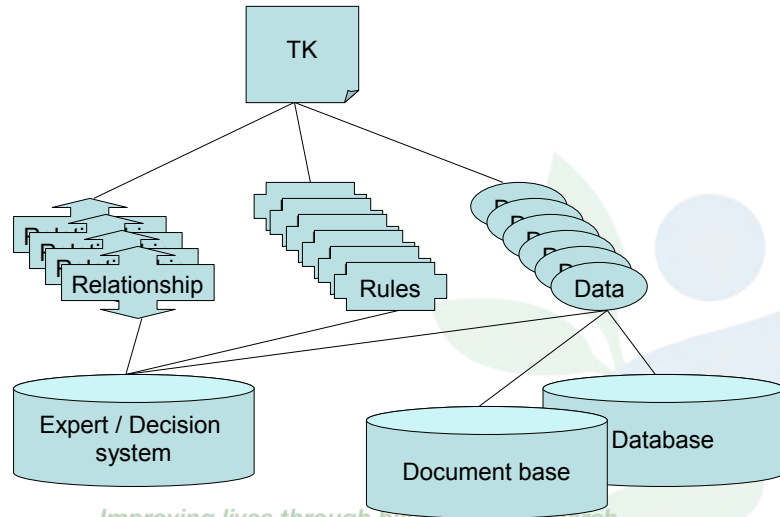
Mapping in knowledge



Storing knowledge

Crop		Ethnic	Cty	Common uses			Projects
Rice		Iban	MYS	Staple, carbohydrate source			TK documentation E02 (D13, C13)
Artifacts				Cultural information			Environment threats and changes
Variety	Parts used	Uses	Others	Norms	Values	Institution	
Numero us	fruit	Family lineage		A person married into a family will grow the rice variety of that family in token amount	The heritage variety specific for each family provides the link back to their ancestor and bonding of a family	Traditional rice varieties are planted each season in small quantities are used as a cultural indicator	The movement of young people to the town could erode this cultural practice. Conservation of the heritage varieties is assured as long as the cultural practice is in place.

What to database



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Thank you

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The participants also discussed potential descriptors to be included in the GRIS-2. In particular, such issues as strengths and weaknesses of a variety, identification of available varieties, measurements of diversity, needs to sustain the diversity, reasons for planting the variety, information about the farmer or households, farm and landraces were actively reviewed by the participants. As a result they agreed on a potential descriptor list stated in **Annex 6**.

Draft Descriptors

Questions and Analysis	Descriptors
Strengths and weaknesses of a variety Identification of available varieties	Taxon descriptors Variety name Variety type (local, modern, introduced) Morphological features Height of tree Fruit size, colour, shape, pericarp texture Leaf shape Crown shape Flower colour Agronomic Traits Taste, Flavour, Pulp density Fruit ripening time (on the tree)
Measurements of diversity richness, evenness, divergence	No of crops available in a farm No of varieties for each crop Acreages of each variety Number of trees of each variety The above can be used as on-farm conservation viability monitoring.
What do we need to sustain the diversity	Pruning (Crown forming, Yield pruning, Renovation) Fertilizing (organic, mineral, time) Soil Management (Plowing, Tillage, Weeding) Watering (Time, Frequency, Type-flooding/farrow) Pollination Pest and Disease (time, Chemicals- time/dosage, Biological-time/dosage, Mechanical-time, frequency) Nurseries (seed, vegetative) Fencing (trench, Mesh-metal, Bushings, Clay wall, Adobe, Wood)
Reason for planting	Yield (no. of trees per ha, gms per meter cube of crown)

the variety	Transportability (high-low) Shelf Life (months/days) Market demand (high-low) Market price (high-low) Disease resistance (high-medium-low) Frost resistance (high-medium-low) Drought resistance (high-medium-low) Salt tolerance (high-medium-low) Process ability (drying, juice, jam, stew, vinegar, alcohol) Appearance/Attractiveness (very good, good, bad) Taste (sweetness, sourness, high-medium –low)
Farmer or Households	Name Age Education level Family members in agriculture (name, age, relation – {wife, son, daughter, and others), education) Duties distribution by family member and gender Village District Province Country Role in the community (Head of village council, agronomist, respected elder) Social networks wrt access to materials, land, labour
Farm	Farm name Location Site type (farm, home garden, plantation) Coordinates (Latitude, Longitude) Altitude Distance from admin city Village District Province Country Size (ha) Site Name (reference) Topography(site) Soil Land structure and crops Water resources Access to equipment /labour/services

	Human power : self and hired (number and percentages)
Landraces	Number of crops Number of varieties Others