Forestry Department

Food and Agriculture Organization of the United Nations

International Poplar Commission Thematic Papers

International Workshop

"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian countries"

FAO Project GCP/INT/059/ITA

Izmit, Turkey, 27-31 July 2009

Cooperazione allo sviluppo Italiana

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Forest Resources Development Service
Forest Management Division
Forestry Department

Working Paper IPC/10
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International Workshop

"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian countries"

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Table of Contents

Acronyms

CFS	Corpo Forestale dello Stato (Italy)
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GAP	*Guneyudogu Anadolu Projesi* (Southeastern Anatolia Project)
GTZ	*Deutsche Gesellschaft für Technische Zusammenarbeit* (German Agency for Technical Cooperation)
IFAD	International Fund for Agricultural Development
IPC	International Poplar Commission
IPS	International Poplar Symposium
ITTO	International Tropical Timber Organization
IUFRO	International Union of Forest Research Organizations
KFW	*Kreditanstalt für Wiederaufbau* (Reconstruction Credit Institute)
LFA	Logical Framework Approach
MDG	Millennium Development Goals
P&W	Poplar and Willow
PFGFTRI	Poplar and Fast Growing Forest Trees Research Institute (Former National Poplar Institute – Izmit, Turkey)
UN	United Nations
WB	World Bank
WWF	World Wide Fund for Nature

International Workshop
"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian countries"

Izmit, Turkey
27-31 July 2009

Opening Session

The International Workshop "Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian countries" was held from 27 to 31 July 2009, at the kind invitation of the Poplar and Fast Growing Forest Trees Research Institute (PFGFTRI) in Izmit/Kocaeli, Turkey. The purpose was to better understand the needs and to provide more effective methods in transferring knowledge and technology in translating scientific research of Poplars and Willows into policies, plans and practices through pilot projects. To this end, the objectives of the workshop were to prepare problem analyses and logical frameworks of action from working sessions to assist in packaging concept notes and proposals to funding agencies for their potential support. A concept note is detailed in *Appendix A*.

The International Workshop was organized by FAO, in collaboration with the Ministry of Environment and Forestry of the Government of Turkey, and funded by the FAO Project GCP/INT/059/ITA, kindly supported by the Government of Italy.

The following countries were represented: Belgium, Bosnia and Herzegovina, China, Croatia, Egypt, Estonia, France, Georgia, Italy, Kazakhstan, Kyrgyzstan, Romania, Tajikistan, Turkey and Uzbekistan. An observer from the International Fund for Agricultural Development (IFAD) also attended the meeting. The list of participants is in *Appendix C*.

Dr. Ahmed Şenyaz, Head, Research and Development Department in the Turkish Ministry of Environment and Forestry, opened and chaired the opening session of the Workshop.

Mr Faruk Şakir Ŏzay, Director, National Poplar Research Institute, Turkish Ministry of Environment and Forestry, welcomed participants and reminded them of the strong linkages between the Institute, FAO and Italy. Mr Ŏzay stressed the progressive reduction of natural forest areas in the world and the role of fast-growing species in meeting the need for renewable raw material for both wood and fuel production.

Mr Mehmet Nakkaş, Deputy Director General, General Directorate of Afforestation and Erosion Control, Turkish Ministry of Environment and Forestry, stressed the role of fast-growing species to reduce pressure on natural forests and increase area productivity. Mr Nakkaş also highlighted the multiple roles of poplar plantings in agriculture. Poplar is often used for windbreaks and when harvested, at the end of the rotation, provides a good return on investment in wood sales. The General Directorate was still active in poplar plantations as it still produced 25,000 seedlings per year, and it established 291 ha of poplar plantations during the period 2005–2009. However, wood quality can only be obtained with good silvicultural and management practices and suitable site conditions. The most planted species by the General Directorate are *Populus euphratica*, in the GAP region (Southeastern Anatolia Project), as it is a very resistant species to saline soils, and *Populus tremula*. Mr Nakkaş finally recalled the role of Italy in the cooperation on poplar application for the CARPATA Project that was implemented during the period 1998-1999 when nurseries were established and about 1,400 ha of poplar were planted on private lands, gallery

plantations and agroforestry systems. Under the project, three meteorological stations and two soil laboratories were established.

Mr Osman Kahveci, Director General of Forestry, Turkish Ministry of Environment and Forestry, highlighted that Turkey annually supplied only one fifth of the total high-quality wood market demand and poplar plantations annually produced 3.5 million m^3 from a total planted area of 145,000 ha. There was still a need to improve research activities in poplar culture with reference to provenance, trials, economic analyses, demonstrative plantations and field surveys. Mr Kahveci also acknowledged the role and the need of fast-growing species for development of the paper and chip wood industries, high-quality wood and bio-energy.

Mr Jim Carle, Chief, Forest Resources Development Service, FAO/Rome, welcomed co-hosts and participants on behalf of FAO and stressed the long-standing partnership between FAO and the Izmit Institute. He also highlighted the role of poplars and willows as components of agricultural and forest systems in temperate regions, especially for smallholder farmers. Poplars and willows provided a valuable raw material supply for poles, pulp and paper, panel boards, plywood, veneer, sawn timber, packing crates, pallets, furniture manufacturing and increasingly as feedstock for bio-energy or biofuel production. As the wood is odourless, colourless and tasteless, it was often used in food and fruit packaging and health products. They also provide a range of non-wood products such as important fodder for livestock and valuable medicines. Poplars and willows could also provide valuable environmental and social services, as well as shelter, shade and protection of soil, water, crops, livestock and dwellings; played an important role in phyto-remediation of severely degraded sites, rehabilitated fragile ecosystems (including combating desertification), forest landscape restoration (often integrated with agriculture, horticulture, viticulture and apiculture), and as fast-growing species, and were effective at sequestering and storing carbon, often on difficult sites. They created employment, could boost exports and contributed to social and economic development and sustainable livelihoods in rural areas. They could beautify urban and peri-urban parks, schools, lakes, waterways, recreational areas and highways as green buffers. Poplars in particular were also leading the way in transgenic research and development.

Mr Carle also stressed that the role of the International Poplar Commission (IPC), its National Poplar Commissions and Working Parties, was to undertake scientific research and prepare management tools, promote exchange of knowledge, undertake joint research programmes, host congresses and study tours and network and report between researchers, growers and users. The IPC mandate was to translate Poplar and Willow science into policies and management practices to enhance their contribution towards sustainable forestry, sustainable land-use and sustainable livelihoods. Whilst striving to meet the needs of people, we were increasingly facing the major impacts, adaptation to, and mitigation of changing climate, the increasing incidence, severity, scale and impacts of extreme weather events (droughts, floods, high winds, etc), the increasing risks of fire, insects, diseases, other invasive species and the spiralling demands for bio-energy and biofuels.

Finally Mr Carle introduced the FAO-Italy Project as an important tool to explore how to improve the contribution of poplars and willows in meeting sustainable livelihoods and land-use globally, and specifically in selected Mediterranean and Central Asian countries in accordance with the UN Millennium Development Goals (MDG). The project was to strengthen country capacity to combat desertification, rehabilitate degraded lands and provide other social and ecosystem services, whilst also producing sustainable supplies of wood, fibre, bio-energy and non-wood forest products to meet peoples' livelihood needs.

Nomination of the Chair

Prof. Khoran Tunçtaner (Turkey) was elected as Chairperson of the Workshop.

Approval of the Agenda

The Provisional Agenda was adopted without amendment and is available in *Appendix B*.

The International Poplar Commission (IPC), and Objectives of the Workshop

Mr Jim Carle drew attention on the purpose of the workshop: to better understand constraints and needs in Eastern Mediterranean and Central Asian countries, to strengthen interactions with Poplar and Willow specialists from regions and poplar and willow specialists from Belgium, China, France, Italy and Turkey; to undertake study tours to discuss policy, technical issues and impacts and benefits of poplars and willows in Turkey; to prepare project proposals; to detail impacts, outcomes, outputs and activities to improve the contribution of poplar and willow to sustainable livelihoods and land use; and to consider IPC membership. Mr Carle also explained the mandate and the mechanism of the IPC and its role in the framework of FAO

Italy-FAO Poplar and Willow Project to enhance the contribution of Poplars and Willows towards Sustainable Livelihoods and Land-use in the Eastern Mediterranean and Central Asian countries

Mr Alberto Del Lungo, Forestry Officer, Forest Resources Development Service, FAO/Rome, and Project Technical Advisor, introduced the Project GCP/INT/059/ITA on Poplars and Willows supported by the Government of Italy, and highlighted that the main target of the Project was in line with the UN Millennium Development Goals (MDGs) with particular reference to MDG 1: "Eradicate extreme poverty and hunger" and MDG 7: "Ensure environmental sustainability and develop global partnerships for development". Mr Del Lungo also reported on the Project activities and work already carried out in one year, and provided some more details on the workshop and on the activities foreseen after the workshop.

Statements by representatives of Poplar Growers and Sawmill Owners

Mr Ismet Karakaş, representative of Poplar Growers from Cildirlar village, welcomed the participants. He stressed that farmers were planting poplars in this area since the establishment of the PFGFTRI, at the beginning of '60s. Over more than 40 years, poplar improved the quality of life by providing better incomes than agricultural crops would have done. Poplar culture also reduced the pressure on natural forests over the years; however poplar prices had recently progressively decreased, being less competitive than wood produced by other plantations initially established by the Directorate of Afforestation and Erosion Control, that were now at the end of their rotation period and were re-planted after having been harvested.

Mr Tayfun Şahin, owner of "Şahin Company", a producer of pallets with almost 40 years experience, spoke on behalf of Sawmill Owners. Mr Şahin acknowledged the role of the National Poplar Institute in providing technical support to the private sector. Thanks to the work of the Institute, the poplar area increased in the region over the last 40 years and many farmers decided to establish nurseries and plantations in the region. Incomes have always been quite significant but in 2005 the poplar sector faced a strong crisis for various reasons, including the decreased support of the Ministry to the Poplar Research Institute. However, despite the crisis, poplar was still planted in the region as it provided a good source of income and reduced the pressure on natural forests. Mr Şahin stressed that the crisis mainly affected poplar plantations producing low-quality wood and was due to the availability of wood from natural forests and from other plantations now at the end of their rotation period, cheaper than poplar as regards silvicultural treatments. However, poplar growers were still getting good income from poplar wood production and often re-invested gains in expanding poplar cultivations. The practice of agroforestry was also quite remunerative in poplar culture as farmers get agricultural crops during the first three years of age of their plantation. Poplar culture practice was also quite common for land owners that are not necessarily farmers as it required fewer treatments than agricultural crops. Finally, Mr Şahin

highlighted the role of poplar as forest plantation in preventing soil erosion in the mountains and plains and the capacity of this culture to remunerate many villagers during the entire cycle of production.

Country reports and discussion

Participants reported on the status and needs of poplar and willow cultivation in their country and presented the state of poplar and willow, including benefits, challenges and constraints faced. A brief summary of the country results was provided by Mr Jim Carle and is reported here below (see also end of *Appendix K*).

- Context. Poplar grows in a wide range of natural forests that are mainly used for conservation, protected areas and recreation. Willow generally grows along water courses and covers less area than poplar. Intensive poplar plantations average area cover from 10,000 to 50,000 ha but face difficulties to expand. Intensive plantations are mainly established for production of wood, fibre and potentially wood energy. Some plantations are also established for rehabilitation of degraded lands and as carbon storage. Intensive plantations are often established with a limited number of clones while intensive plantations of willow cover limited areas and are mainly used for phyto-remediation, bio-energy and treatment of water waste. Agroforestry in poplar cultivation covers a diverse range of mechanisms while agroforestry in willow cultivation is relatively less spread and covers small areas.

- Key stakeholders in poplar and willow development. The main institutions involved in countries responsible of governance in poplar and willow policies, programmes and technical support are Ministries of Forestry, Environment and/or Agriculture. Research on poplar and willow is carried out by State Forest Institutes and Universities. Most countries have Universities for professional training or access to neighbouring countries while technical/operational training for forest managers and artisans needs to be strengthened. There is also a strong need for forest extension (smallholders, farmers). The main investors in poplar and willow afforestation/ harvesting/end use are still the government and State enterprises. Farmers, smallholders, companies and private lands depend upon land-use and crop ownership rights

- Benefits from poplar and willow cultivation (economic, environmental and social). Benefits from poplar and willow cultivation depend upon purpose, scale, investor and land-use. Poplar and willow are very flexible species and can be grown in a wide range of mechanisms from small to large scale. They are particularly suitable for carbon sequestration/storage, protection of waterways, soils, watersheds, shelters of villages, roads, public utilities, bio-energy. Both poplars but specifically willows are particularly suitable for phyto-remediation, treated and untreated water waste. Poplars provide valuable supply of wood, fibre and many other products. Poplar and willow culture support rural employment. They can be very suitable if planted and managed with appropriate technology, in phase with livelihood needs, local products for local people, help to combat urban drift, development of village-based industries.

- Major issues in poplar and willow culture. There is a need for coherent, consistent, clear policy, legal and regulatory frameworks to enable investing conditions. There is also a need for well defined institutional frameworks to support transition from centralized/decentralized systems. The State control is still strong, but the private sector is slightly emerging with smallholders and farmers. Poplars and willows require inter-sectoral/multi-disciplinary management. Still the limited species and clones used are a serious risk for their vulnerability to insects, diseases and other pests. There is also a public and political negative perception about poplars and willows. The emerging issues of bio-energy and carbon sequestration are the major issues to be considered for poplar and willow application. The industrial use of poplar and willow is in infancy with strong emphasis on protection and conservation.

- Problems/constraints experienced in poplar and willow culture. The State dominance with unchanged policy and legal frameworks is still a constraint in the diffusion of poplar and willow cultivation; there is also a bias against intensive poplar and willow plantations. Threats of insects, diseases, pests, fires, natural disasters (droughts, floods, winds, etc) related to changes in hydrology are also other serious constraints especially in arid lands. The small private sector feels uncertainty for market situation. There is also a lack of sustainability management tools. There is a poor public perception and negative bias for poplar and willow plantations that require extension practices, especially with smallholders and investors.

- Opportunities to meet sustainable livelihoods and land-use. Poplar and willow cultivation enables conditions for private smallholders and corporate. There are possibilities with village-based industries and industry development. Poplars and willows can be used for renewable, energy efficient, environmentally sensitive provision of products and services. They can also be used for suitable rehabilitation of degraded or marginal lands. In agroforestry practices, they require less intensive management than annual crops; they are also flexible over forestry and agricultural land-uses and their fast-growing capabilities are relevant for carbon and bio-energy markets.

- Priority needs to support poplar and willow development. The multiple potentials of poplars and willows must be recognized. There is a need to integrate institutional support systems – forestry and agriculture. Policy, legal and long-term strategy development (including climate change mitigation, bio-energy, etc.) should be improved. Better networking and collaboration between scientists are requested to share research and results. Science, policy and practices must be linked. Public awareness and understanding of poplar and willow cultivation should be improved through pilot projects to demonstrate to politicians and to the public. Finally, there is a need to support investment in industry and development

Guidelines for working sessions and introduction to the Logical Framework Approach (LFA)

Mr Jim Carle provided the Guidelines to working sessions and introduced participants to the Logical Framework Approach (LFA), the methodology adopted by the United Nations to package project proposals and projects. Both guidelines and the introduction to LFA are available respectively in *Appendix D* and *Appendix E*.

Working sessions

Working Sessions were organized on Tuesday and Friday to allow participants to draft project proposals based on the country needs reported during the Plenary Session. Three Working Groups were set up, mainly according to common regional needs: Working Group No. 1: East European countries; Working Group No. 2: Central Asian countries; and Working Group No. 3: Egypt, Georgia and Turkey. On Tuesday the three Working Groups worked on the following:

- Identification of project priority needs
- Project impact and outcomes
- Project outputs and actions
- Project outputs, actions, key players, indicators and risks

At the end of the day, participants met again in Plenary to discuss their preliminary results and provide feedback.

Participants met once more in their Working Groups on Friday to finalize their project proposals based on the information collected during the field trip which had been planned on Wednesday and Thursday.

Results of the work done by the three Working Groups are summarized here below while the full set of project proposals formatted according to the LFA are detailed in the tables reported in *Appendix F*. Both Working Groups 1 and 2 were able to identify common problems at regional level that can be addressed with only one regional project, while Working Group 3 prepared three different projects according to the needs of each country, taking into account that these needs were too far and different in terms of political conditions and ecological regions.

Working Group No. 1: East European countries

- Identified problems: (1) Policy approach: smallholders in the country are not actors of the process (policy and institutional); (2) Lack of transfer of knowledge through extension services; (3) Insufficient data about suitability and availability of land; (4) Insufficient collaboration between stakeholders; (5) Insufficient reproduction material and technology transfer; (6) Natura 2000 and environmental services/problems.
- Project impact: Promotion of effective land use and livelihood improvement through sustainable P&W management in intensive and/or natural systems.
- Project outcomes: (1) Increasing the effectiveness of authorities/institutions in decision making process regarding P&W production and wood utilization; (2) Improving the management of natural P&W-based stands through transfer of knowledge, innovation and capacity building using environmentally sustainable and cost effective tools.

Working Group No. 2: Central Asian countries

- Identified problems: (1) Institutional and systematic issues (no uniform system for poplar growing, and conservation of natural poplar forests); (2) Need for poplar plantations to satisfy demands for construction materials and energy; (3) Water shortage; (4) No experience for conservation (Tugai forests); (5) Weak legislative and regulative system for private ownership of forest cultivation; (6) Institutional weakness – e.g. under the Ministry of Agriculture and Water Resources (Uzbekistan); (7) No guidance/structure for the control of poplar plantations in the State programme (Tajikistan); (8) Create legal framework for poplar plantations; (9) No institution for poplar development; (10) Weak financing; (11) Technological issues.
- Project impact: Assistance to improvement of ecological conditions through a sustainable development of rural communities.
- Project outcomes: (1) Improvement of legislative, regulatory and policy issues; (2) Development of P&W for adaptation to climate change, water resources management, bio-energy use; (3) Increasing of the capacity and public awareness; (4) Increasing cross-sectoral cooperation.

Working Group No. 3: Egypt, Georgia, Turkey

Egypt

- Identified problems: (1) Wood imports are too expensive as local wood is unavailable; (2) Lack of intensive plantations; (3) Lack of water resources; (4) Disposing and recycling of sewage water (phyto-remediation).
- Project impact: Ensure environmental sustainability of water resources through the use of Salicaceae and increase people wellbeing.
- Project outcomes: Increase wood production, job opportunities and improve environment quality.

Georgia

- Identified problems: (1) Establish policy framework; (2) Define priority areas suitable for poplar (Georgia has already a forest inventory to be updated); (3) Allocate areas for intensive plantations (Government), and allocate public land to farmers to grow poplar.
- Project impact: Achieving sustainable livelihood and people wellbeing through poplar and willow culture.
- Project outcomes: Increase state and private sector wood industries and development of smallholder economy.

Turkey

- Identified problems: (1) Lack of Government support to strengthen poplar cultivation; (2) Need for detailed market analysis; (3) Need for fibres and bio-energy, capacity building in short-rotation crops; (4) Inventory of natural and planted poplar; (5) Need to strengthen poplar certification from poplar.
- Project impact: Contribution of forestry and agroforestry to sustainable development.
- Project outcomes: Increase poplar and willow culture and use.

Field Trip

A field trip was organized on 29 and 30 July by PFGFTRI in the Akyazi and Iznik provinces, to demonstrate the role of poplar culture in forestry and agroforestry. The field trip was a good opportunity to show the achievements in poplar culture after many years of cooperation through multi- and bi-lateral projects carried out by FAO and Italy. Participants had the possibility to visit nurseries, intensive plantations and agroforestry applications of poplar. Particularly relevant were the visits made to three different sawmills that utilize poplar wood for different uses: plywood, pallets and fruit boxes. This was another opportunity for participants to realize the different end uses of poplar wood. Of particular interest was a quick visit to the farm of the PFGFTRI to see a collection of poplar clones established in 1959 and left unmanaged and untreated over the last 20 years because of the lack of funds. Most of the poplar clones are still alive, show high vitality and look as naturalized in the surrounding environment. Also, most of the clones have a very interesting high-standing shape and could be utilized as further reproductive material. The booklet describing the sites visited during the field trip is available in *Appendix G.*

Debriefing after the field trip on relevant issues for finalization of project proposals, including technical, policy and institutional issues relating to provision of wood and non-wood products and social and environmental services

On Friday 31 July, a short debriefing after the field trip on relevant issues highlighted for the project proposal finalization was carried out in Plenary session. A summary of the issues reported is provided here below.

Central Asia

- The field trip provided many different ideas on the use of poplar that would be interesting to implement in Central Asia.
- There are many differences between Turkey and Central Asian countries in land uses, land ownership, climate (arid conditions) and soil (water scarcity).
- Poplar represents a good compromise between agriculture and agroforestry and the integration of poplar in agroforestry systems is quite interesting.
- Training, through pilot projects and demonstration to farmers, is a key element in the development of poplar culture as demonstrated in Turkey.
- Farmers are very much involved in poplar development as there is a marked demand and poplar culture is profitable.
- Farmers are also quite integrated in poplar development through linkages with research organizations like in the case of the Poplar Institute in Turkey.

· There is a well developed system for poplar processing along the entire chain from the crop to the final end use.

China

· Linkages between researchers and farmers should be strengthened for a better use of clones and forestry and agroforestry models to integrate poplar with other agricultural crops.

Europe

· Turkish economy is developing very fast. Major positive effects took place during the last ten years that can also be appreciated in poplar culture.
· Application of science and technology to poplar culture in Turkey is similar to Europe.
· Turkey is a bridge between Europe and Northern Africa, Eastern Europe and Central Asia in poplar culture.
· The integration between poplar and agriculture is particularly successful, very interesting and provides supplementary income to farmers.
· There are still many different opportunities in poplar culture in Turkey, particularly in biomass end use.
· Training has been particularly effective to farmers as it can be seen from their participation and their improvement in poplar culture and industries.
· Clonal selection is still related to Europe. More attention and care should be given to local natural resources as area of *Populus euphratica* that seems to be in danger for intensive exploitation.
· More breeding programmes should be carried out, especially for resistance of poplars to drought.
· Farmers should be more careful and use more registered poplar clones, especially if they aim to achieve high wood quality. PFGFTRI should provide more support through training and registered replication material.

Revise logical Framework of project proposals, including impacts, outcomes, outputs, activities, key actors, indicators and risks

Based on the information collected in the field, participants met again in Working Groups to finalize the project proposals prepared earlier.

Final Plenary Session

Participants finally met in Plenary to present and discuss the refined five project proposals – one for Eastern European countries, one for Central Asian countries, one for Egypt, one for Georgia and one for Turkey. Project proposals standardized within the Logical Framework Approach are reported in *Appendix F.*

Ms Sheila Mwanundu (IFAD) made a presentation on funding programmes carried out by IFAD and mechanisms to apply. Ms Lorenza Colletti (Corpo Forestale dello Stato, Italy) made a presentation on funding programmes by the European Union and on the mechanisms to apply. Mr Jim Carle made a presentation on possibilities to work with FAO as technical executing agency. All mentioned presentations are available on *Appendix H.*

Mr Alberto Del Lungo made a short presentation on mechanisms and potential benefits to apply to the International Poplar Commission membership. Copy of the presentation is available in *Appendix I.*

Prof. Giuseppe Scarascia-Mugnozza, Responsible for hosting the IUFRO International Poplar Symposium V (IPS) meeting, to be held in September 2010 in Orvieto, Italy, welcomed the attendance of participants. Copy of the presentation is available in *Appendix J.*

Closing remarks

In his closing remarks, Mr Jim Carle stressed the need to network and work together to accomplish the project proposals. FAO would be responsible for drafting concept notes and submitting them to Italy, the European Union and Funding Agencies, IFAD and the World Bank. Resource countries would help in supporting project proposals, and participants from developing countries would work with their governments to support project implementation.

Prof. Tunçtaner, Chairperson of the Workshop, declared the International Workshop closed.

Appendix A – Concept Note

International Workshop:

"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian Countries"

Izmit, Turkey
27 – 31 July 2009

Introduction

Poplars and Willows, which account for more than 80 million ha of natural and planted forests and agroforestry systems globally, play a significant role in afforestation and reforestation, rehabilitation of degraded forests and fragile ecosystems; enhance the contribution of forests and trees in mitigating the effects of climate change and reverse the loss of natural forests and restoration of landscapes. They provide a wide range of wood, fibre, bio-energy/biofuel and non-wood forest products together with a wide range of social and ecosystem services but the potential to support sustainable livelihoods and land-use in developing countries, particularly in Eastern Mediterranean and Central Asian countries, is not being fully realized.

Project

The Italian-funded FAO project GCP/INT/059/ITA, "Poplars and Willows for Sustainable Livelihoods and Land-use", under the Secretariat of the International Poplar Commission (IPC) (http://www.fao.org/forestry/ipc/en/), aims to improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian countries. The project is in line with both the objectives of the IPC (*to study the scientific, technical, social and economic aspects of Poplar and Willow cultivation and to promote the research and the exchange of ideas among the researchers, producers and users*), and with the Millennium Development Goals (*...eradicate extreme poverty and hunger*; *ensure environmental sustainability*; and *develop global partnerships for development*).

Purpose of the meeting

The project GCP/INT/059/ITA is organizing an international workshop on Poplar and Willows with selected Mediterranean and Central Asian countries to have a better understanding of the needs and to provide more effective methods in transferring knowledge and technology in translating scientific research (within and beyond the region) into policies, plans and practices to combat desertification, rehabilitate degraded lands and provide other social and ecosystem services, whilst also producing sustainable supplies of wood, fibre, bio-energy and non-wood forest products.

Participants

The meeting will bring together 30-35 key stakeholders from both donor and recipient countries with the aim to prepare pilot projects to transfer Poplars and Willows knowledge and technology to less developed countries in the regions. The meeting targets Mediterranean, Central Asian and East European Countries, particularly: Azerbaijan, Bosnia and Herzegovina, Croatia, Egypt, Estonia, Kazakhstan, Kyrgyzstan, Romania, Syria, Tajikistan, Turkey, Turkmenistan and Uzbekistan, and will include specialists from Belgium, China, France and Italy. Representatives of the International Poplar Commission Executive Committee will help to facilitate the workshop.

Prerequisites

Countries willing to participate will report responses to a questionnaire on Poplar and Willow cultivation and conditions in their respective countries. The information will include Poplar and Willow data on areas (natural and planted forests and agroforestry), purposes, ownership, cultivars in use, nursery production, and health. Responses to questionnaire will be reported at the workshop to highlight major challenges and opportunities in Poplar and Willow cultivation.

Place and period

Five working days, including a two-day field trip on Poplars and Willows application, at the PFGFTRI in Izmit, Turkey, from 27 to 31 July 2009.

Agenda

Day 1 (Monday, 27 July 2009)

Plenary

- Registration
- Opening (Organizer)
- Nomination of the Chair
- Reports from Countries - Challenges and Opportunities

Day 2 (Tuesday, 28 July 2009)

Plenary

- Analysis of regional needs
- Introduction to the Logical Framework Approach

Working Sessions (Genetics, Silviculture, Cultivation systems (Agroforestry/Stands), End uses)

- Identification of project priority needs and pilot project proposals drafted into Logical Framework: Impacts, Outcomes, Outputs, Activities

Plenary

- Summary of Working Sessions, preliminary results

Day 3 (Wednesday, 29 July 2009)

Field trip: poplar and willow applications in Turkey: productive and protective purposes (Combating desertification, erosion control) – Refinement of Logical Framework

Day 4 (Thursday, 30 July 2009)

Field trip: poplar and willow applications in Turkey: productive and protective purposes (Combating desertification, erosion control) – Refinement of Logical Framework

Day 5 (Friday, 31 July 2009)

Working Sessions

- Finalizing of project proposals

Plenary

- Endorsement and recommended actions

Outputs

- Expansion of the network of Poplar and Willow Specialists
- Identification of project countries and partners
- Project proposals for submission to potential donors

Potential Outcomes

- Strengthening Poplar and Willow technology and application in the Eastern Mediterranean and Central Asian countries
- New country membership to strengthen the IPC

Language

The meeting will be held in English. Two interpreters will assist in English and Russian language.

Appendix B - Agenda

Monday, 27 July 2009

Plenary (All day)

08.30-09.30 Registration

09.00-10.00 Opening and Welcome

- *Moderator, Mr Ahmed Şenyaz, Head, Research and Development Department, Ministry of Environment and Forestry, Turkey*
- *Mr Faruk Şakir Özay, Director National Poplar Research Institute, Ministry of Environment and Forestry, Turkey*
- *Mr Mehmet Nakkaş, Assistant Director of Afforestation and Erosion Control, Turkish Ministry of Environment and Forestry*
- *Mr Osman Kahveci, Director General of Forestry, Ministry of Environment and Forestry, Turkey*
- *Mr Jim Carle, Chief, Forest Resources Development Service, FAO, Rome, Italy*

10.00-10.30 Nomination of the Chair

Approval of the Agenda

Introduction of Participants

The International Poplar Commission, FAO and Objectives of the Workshop

- *Mr Jim Carle, Chief, Forest Resources Development Service, Forestry Department, FAO, Rome, Italy*

Italy-FAO Poplar and Willow Project to Enhance the Contribution of Poplars and Willows towards Sustainable Livelihoods and Land-use in the Eastern Mediterranean and Central Asia

- *Mr Alberto Del Lungo, Forestry Officer, Technical Adviser, Project GCP/INT/059/ITA, Forest Resources Development Service, Forestry Department, FAO, Rome, Italy*

10.30-10.45 *Coffee break*

10.45-12.30

- Statement by Mr Ismet Karakas, Representative of Poplar Growers and by Mr Tayfun Şahin, Representative of Sawmill Owners (Şahin Company)
- Country reports and discussion - Challenges and Opportunities in Poplar and Willow cultivation - *by country representatives*

12.30-13.30 *Lunch*

13.30-15.00

- Country reports and discussion - Challenges and Opportunities in Poplar and Willow cultivation - *by country representatives*

15.00-15.15 *Coffee break*

15.15-16.00

- Country Reports and discussion - Challenges and Opportunities in Poplar and Willow cultivation - *by country representatives*

16.00-17.30

- Synthesis of key messages and discussion – by *Jim Carle*

Tuesday, 28 July 2009

08.30-09.00 *Plenary*

- Guidelines for Working Sessions
- Introduction to the Logical Framework Approach

09.00-10.00
- *Working Sessions:* Identification of project **priority needs** (Genetics, Silviculture, Cultivation systems [Agroforestry/Stand], End uses) taking into account participatory and pro-poor, people-oriented approaches to better serve sustainable livelihoods and land-use

10.00-1015 *Coffee break*

10.45-12.30
- *Working Sessions:* Project **impact and outcomes** (Genetics, Silviculture, Cultivation systems [Agroforestry/Stands], End uses) taking into account participatory and pro-poor, people-oriented approaches to better serve sustainable livelihoods and land-use

12.30-13.30 *Lunch*

13.30-15.00
- *Working Sessions:* Project **outputs and actions** (Genetics, Silviculture, Cultivation systems [Agroforestry/Stand], End uses) taking into account participatory and pro-poor, people-oriented approaches to better serve sustainable livelihoods and land-use

15.00-15.15 *Coffee break*

15.15-16.30
- *Working Sessions:* Project **outputs, actions, key players, indicators and risks** (Genetics, Silviculture, Cultivation systems [Agroforestry/Stands], End uses) taking into account participatory and pro-poor people-oriented approaches to better serve sustainable livelihoods and land-use

16.30-17.30
- *Plenary:* Feedback of Working Sessions, preliminary results – by *Working Session Rapporteurs*

Wednesday, 29 July 2009

Field Trip to Akyazi District

08.30 *Departure*

- Windbreaks
- Agroforestry
- Nursery production
- End Use: pallets
- Management of intensive plantations

Throughout the field trip, discussion on the social, environmental and economic impacts that the agroforestry, plantation and nursery visits have had on farmers, communities, investors, processors and users and relevance for project proposal preparation.

19.00 *Back to Izmit*

Thursday, 30 July 2009

Field Trip to Iznik District

08.30 *Departure*

- End Use: Pilling for fruit baskets (presented by owner)
- Intensive forest plantations (presented by owners)
- Nursery production (Challenges and opportunities in poplar growing, market demand, clones (presented by poplar growers))

Throughout the field trip, discussion on the social, environmental and economic impacts that the agroforestry, plantation and nursery visits have had on farmers, communities, investors, processors and users and relevance for project proposal preparation.

- Sightseeing

20.00 *Back to Izmit*

Friday, 31 July 2009

08.30-09.00 *Plenary:* Debriefing after the field trip on relevant issues for finalization of project proposals, including technical, policy and institutional issues relating to provision of wood and non-wood products and social and environmental services.

09.00-10.00 *Working Sessions*: Revise Logical Framework of project proposals, including impacts, outcomes, outputs, activities, key actors, indicators and risks.

10.00-10.15 *Coffee break*

10.15-12.30 *Working Sessions*: Finalize project proposal presentations.

12.30-13.30 *Lunch*

13.30-16.00 *Plenary*

- Present and discuss project proposals
- Next steps - Commitment towards action
- Opportunities for funding
- IPC membership benefits

16.00-16.30 *Closing remarks*

- Ministry of Environment and Forestry
- PFGFTRI
- FAO

16.30 *Workshop Closure*

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Appendix D - Guidelines

Guidelines to Chairs of Working Sessions

Chairpersons will introduce the session topic, time management, guide discussions and sum up. Specifically:

- Introduce the Chair and the Rapporteur
- Introduce the topic and duration of the Working Session
- Outline the specific scope of each Working Session:
    - Priority Problems and Justification
    - Impact and Outcomes
    - Outputs and Actions
    - Outputs, Actions, Key Stakeholders, Assumptions, Indicators and Risks
- Remind working session participants to relate discussions to the theme of the workshop: "Improve the contribution of Poplars and Willows **in meeting sustainable livelihoods and land-use** in selected Mediterranean and Central Asian countries"
- Remind working session participants that each technical session is to consider how to:
    - Exchange knowledge and technology between technical specialists from industrialized countries in poplar and willow culture and developing countries
    - Transfer scientific knowledge into formulating policy, planning and practices
- Use country responses to questionnaires and oral presentations as a basis to stimulate discussions
- The following questions will assist in stimulating discussions:

✓ What are the priority problems and justification?

- What are the specific problems to be addressed (policy, technical, institutional, others)?
- What are the major issues related to these problems?
- How does this relate to the Government strategy for development and forestry?
- Who are the key stakeholders?
- What other projects/programmes already exist in this field?
- What other donors are active in this field?
- Define the justification highlights
- **Complete the Problem and Justification Summary Table provided**

✓ What should a pilot project for 5 years focus upon?

- What do you consider will the impacts (objectives) of the project be?
- What realistic outcomes (benefits) and target beneficiaries do you intend to achieve?
- What realistic outputs (policy, technical, institutional) to address the priority needs?
- What are the main activities to achieve the outputs?
- Who are the key players to undertake the outputs/activities (lead players, support players/ partners)
- What are the key assumptions needed for success?
- What are key indicators (measures) of achieving output and/or outcome results?
- According to each output, what are the main risks?
- **Complete the Logical Framework of Action Summary Table provided.**

✓ What other relevant background information?

Guidelines for Rapporteurs of Working Sessions

Rapporteurs will record key points that arise from working sessions in accordance with the headers as outlined in the Guidelines for Chairs. These will be prepared into bullets or statements for presentation back to plenary at the end of Day 2 and ultimately into a Problems-Justification Summary Table and a Project Logical Framework of Action for presentation to plenary on Day 5.

The above documents will ultimately form the basis for the final formulation of the projects

Specifically the Rapporteur is to:

- Record key points from working session discussions
- Prepare an electronic summary of highlights (bullets points is an effective way) to include:
  Problem-Justification Framework
    - Problems to be addressed (policy, technical, institutional, others)
    - Major issues
    - Reference to Government strategy for development and forestry
    - Key stakeholders
    - Other projects/programmes
    - Other donors
    - Justification highlights

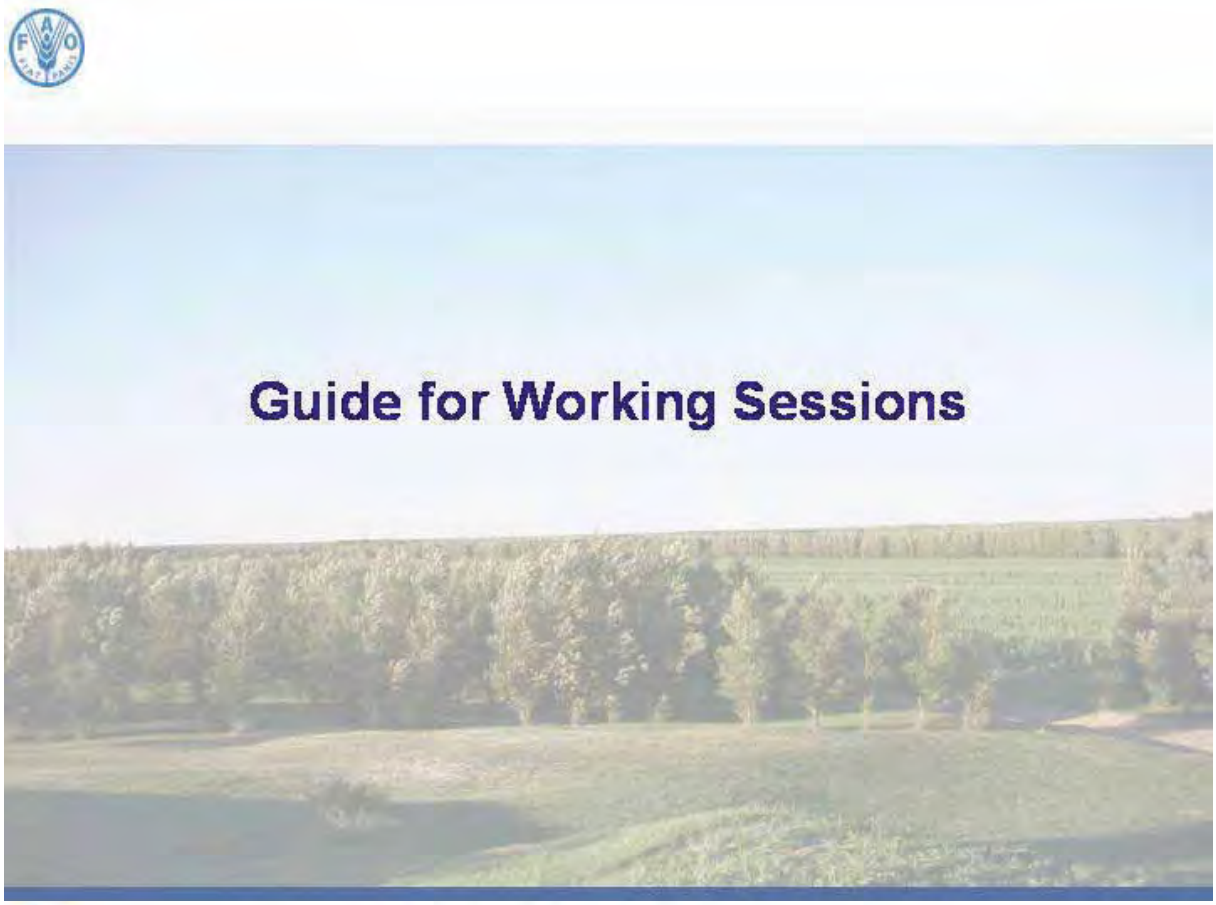
- **Ultimately summarize discussions into the Problem - Justification Summary Table provided**

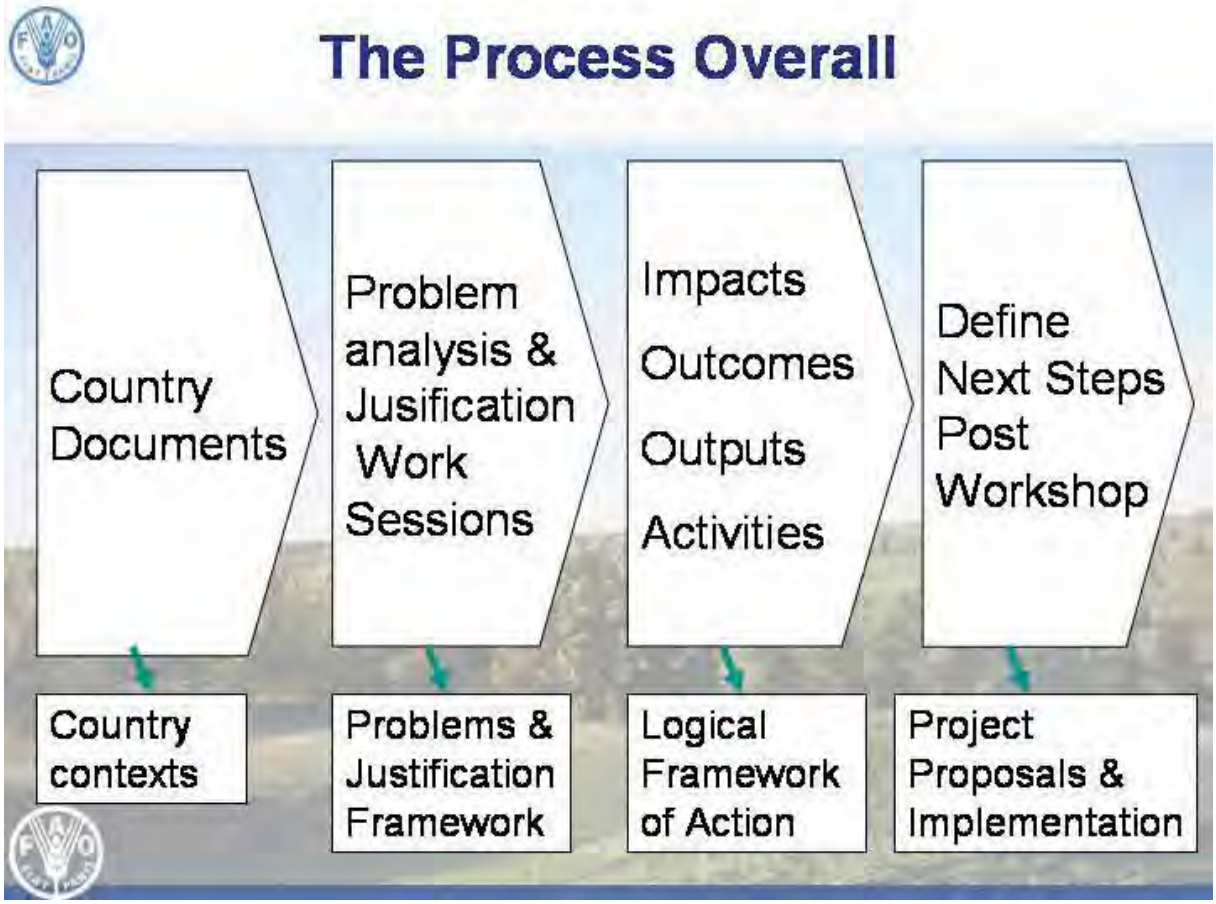
  Project Logical Framework of Action
    - Impacts (objectives) of the project
    - Outcomes (benefits) and target beneficiaries
    - Outputs (policy, technical, institutional)
    - Activities
    - Key stakeholders to undertake the outputs/activities
    - Key assumptions
    - Indicators (measures) of achieving output and/or outcome results
    - Main risks

- **Ultimately summarize discussions into the Logical Framework of Action Summary Table provided.**

- **Other related information**

Rapporteurs to provide the Flip Chart and/or electronic summaries and tables to Michele Millanes, FAO Secretariat as soon as possible after preparation


Guide for Working Sessions


The Process Overall
Country Documents
Problem analysis & Jusification Work Sessions
Impacts
Outcomes
Outputs
Activities
Define Next Steps Post Workshop
Country contexts
Problems & Justification Framework
Logical Framework of Action
Project Proposals & Implementation

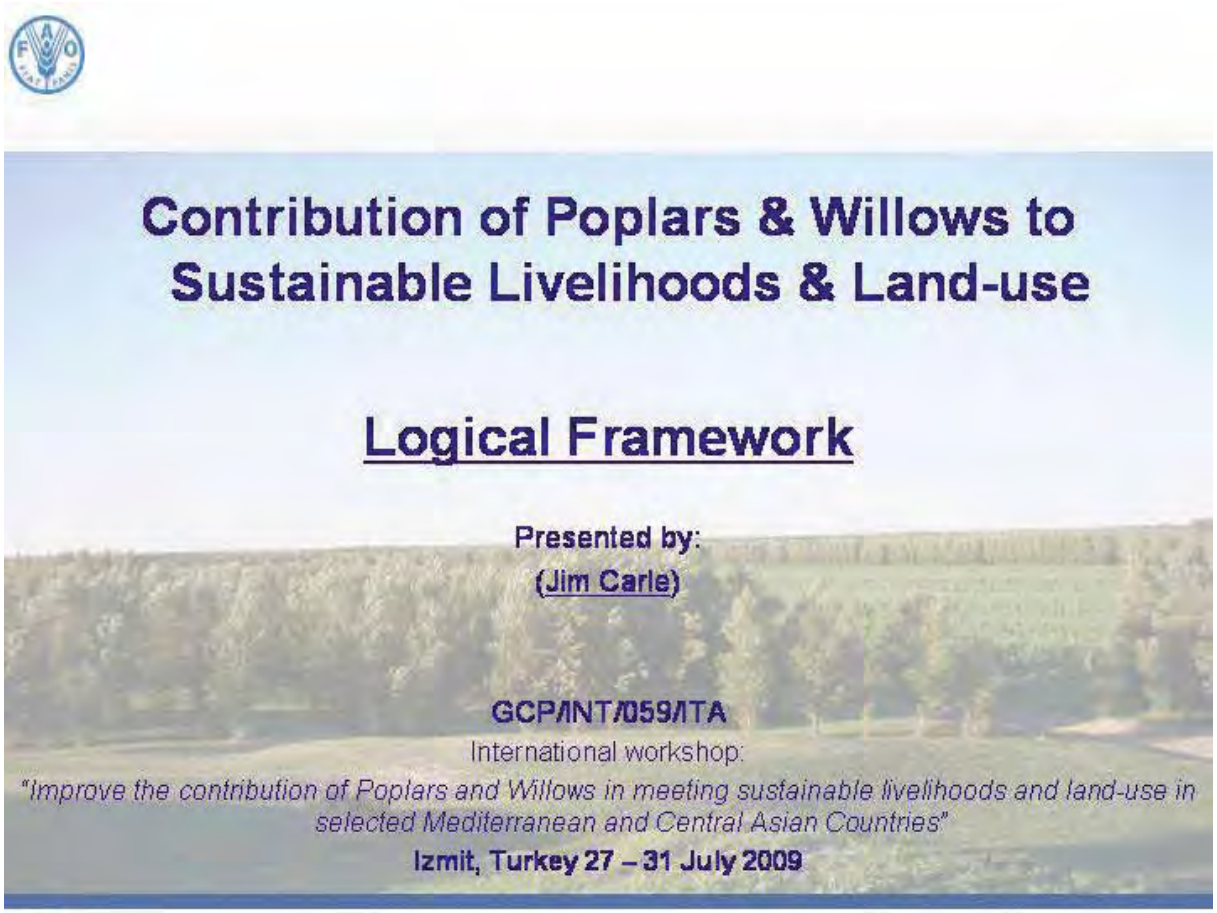
Organization of Working Sessions

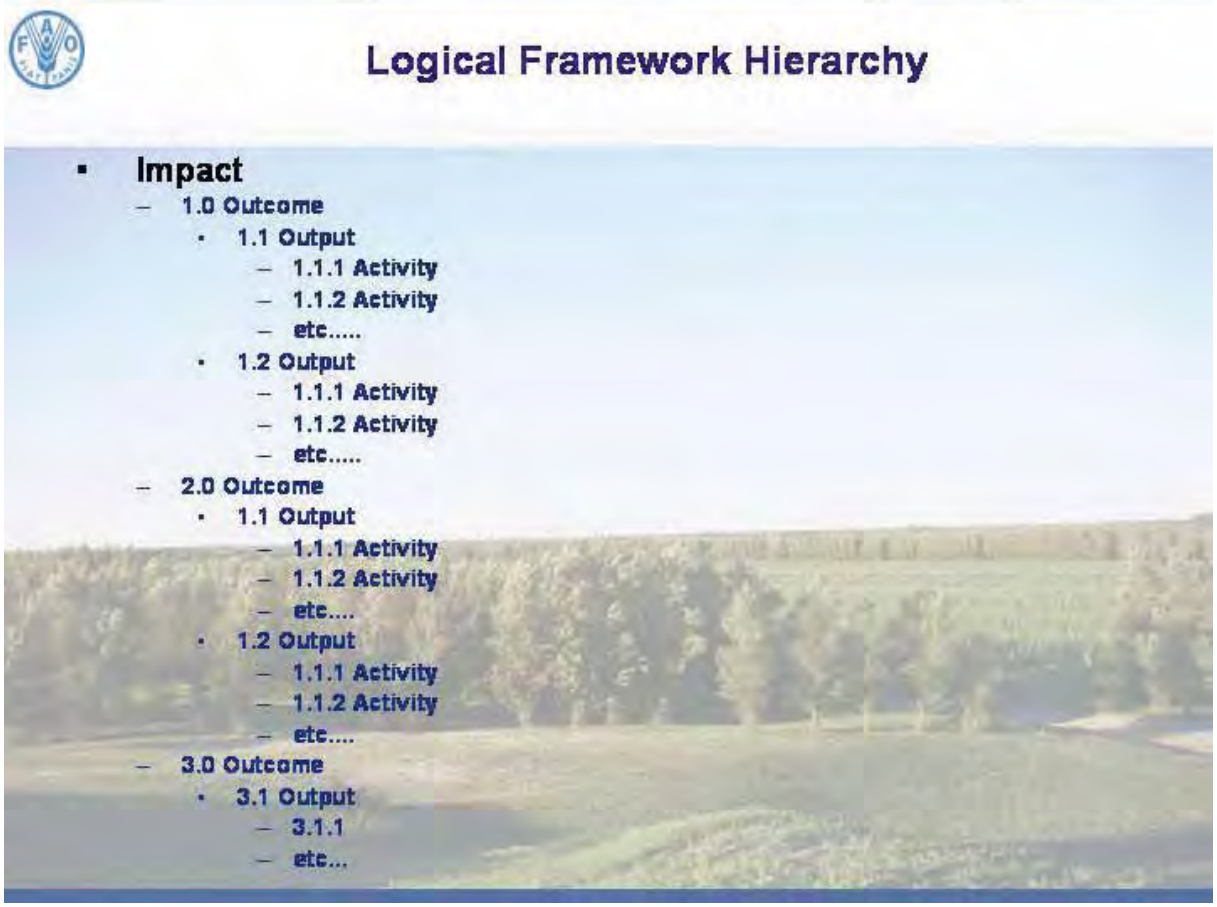
- Elect a Chair
- Elect a Rapporteur
- Use Resource Persons (Italy, France, Belgium, Turkey, China)
- Guidelines for Chairs and Rapporteurs
- Use flip charts and/or computers to record key inputs
- As ideas firm, use Summary Tables provided:
  - Problems and Justification summary table
  - Logical Framework of Action
- Plenary presentations of Working Session Feedback
  - Interim results
  - Final results
- Agree upon follow up actions

Process within context of Workshop

- Day 1:
  - Country questionnaires & present highlights
- Day 2:
  - Agree on approach & composition of Working Sessions
  - Identify Problems and background justification, complete Summary Table
  - Define Impacts, Outcomes, Outputs & Activities for a 5 yr Programme (policy, institutions, technical, other) and detail in Logical Framework Summary
  - Preliminary proposals to plenary
- Day 3 & 4:
  - View alternative research, growing & uses of P & Ws
  - Discuss policy, institutional, technical issues
  - Discuss social, environmental and economic impacts
  - Discuss benefits to the investors
- Day 5:
  - Complete the Logical Frameworks (incl. key stakeholders, indicators, assumptions, risks)
  - Final presentations of pilot proposals to plenary
  - Actions needed for follow up

Power Point Presentation





Eastern Mediterranean Countries: Problem Identification

Problems and Justification Summary Table
Eastern Mediterranean Countries

Problem Identified	Major Issues	Government Strategy	Major Stakeholders	Other Projects in the Sector	Other Donors in the Sector	Justification Components
Policy approach: smallholders in the country are not actors of the process (policy and institutional) **Causes:** • Legislative and regulatory discontinuity • Lack of fiscal incentives and subsidies • Lack of public awareness programs • State Industry *vs*. private industry **Effects:** • Difficulty in engaging in long-term land investment as tree plantations require • Unused land/ abandoned land/ land degradation (poor land use planning **IWA (Impact Without Actions):** • Further degradation/ decreased rural development	**Negative issues** - Political/economic transition – lack of coherent consistent legal regulatory frameworks - Technically insufficient approach to farming, poplar plantation, cultivation, poplar related initiatives - More restrictive environmental regulations - Low economic level of rural communities - Unsatisfactory public and political awareness	**- Poor and uninformed governmental decision process**	• Government – public agencies • Public forest enterprises • Forestry extension services	• BENWOOD(ap) • BIOPROS(ap) • NOVELTREE (r&dp) • ENERGYPOPLAR(r&dp) • PLEN • Establishment of clone archives (bilateral Bosnia Herzegovina – *Italy)*	• IFAD • EU • Co-financing public local agencies • IBRD • Governments • EBRD • Private foundations • INTERREG	• Align with EU regulations regarding: renewable energy, water waste management, Natura 2000, Kyoto Process, 20/20/20/ climate-energy, • Green Danube corridor linking regional collaboration Romania, Bulgaria, Ukraine, Moldova • Rural development programs of all the countries in the area • Convention on Biodiversity • Supporting the transition of production means from public to private environment • Supporting a correct legislative drafting process with proper information • It is time for drafting or refining medium- and long-term governmental strategies • Poplar Commissions
Lack of Transfer of Knowledge (ToK)/ extension of services. **Causes:** • Poor institutional framework for ToK • Insufficient development of a multifunctional approach • Tendency to abandon/sell land (poor commitment) **Effects:** • Inefficient utilization of land **IWA**: • Further degradation/ decreased rural development	**Positive issues** - Improving economic competition - Attractiveness to foreign investors - Large potentials for forest environmental services - Availability of land - Large potential of bioremediation	**- No/poor involvement of population and private stakeholders in this process**	• Land owners • Investors • Members of the rural communities • Forest and farmers associations • Natura 2000 administrations	•	•	• Creating an enabling environment for private farming sector • Avoiding land degradation • Need for land inventories and support for ongoing inventories

Insufficient data about suitability and availability of land **Causes:** • Lack of technical/professional infrastructures • Unsatisfactory land use planning **Effects:** • Lack of technical support for policy makers • Reduced revenues potential for land owners **IWA**: • Inadequate decisions and strategies	•	•	• Companies dealing with poplar planting and wood transformation • Bio-energy • Bio-refineries	•	•	• Existing Institutions to be able to provide technical support: Forestry Extension Services, Chamber of Foresters and Wood Technologies (Croatia), European Biomass Industry Associations, Romanian Forest Research Institute, International Energy Agency, Romanian State Forest Administration.
Insufficient collaboration between stakeholders **Causes**: • Lack of communication and info exchange **Effects:** • Conflicts, insufficient fundamental regulations	•	•	• NGOs • Local communities	•	•	• Functioning National Poplar Commissions
Insufficient reproduction material and technology transfer **Causes:** • Lack of institutional collaboration • Change in site conditions • Lack of connections between farmers and research institutions • Lack of tailor-made approach **Effects:** • Unexploited potential resources • Narrow genetic base and adaptability • Modest levels of investments **IWA:** • Risks of emvironmental disasters • Poor technical implementation of planned poplar plantations • Strongly reduced revenues for stakeholders (farmers, ...) • Discontinuity of the supply chain of the products • Market / industry poor development	•	•	• Established market structures • Research institutions • Education institutions	•	•	•

Natura 2000 and environmental services/problems **Causes:** • Poor knowledge • New legislation • Lack of participatory approach • Exotic *vs.* native species **Effects:** • Change of management form/approach • Need for scientific studies • Unnecessarily prescriptive approach to tree farmers **IWA:** • Conflicts with owners • Difficulties to setup a multifunctional approach with land users	•	•	•	•	•	•

Logical Framework of Action Summary Table
Eastern Mediterranean Countries

Impact	Outcome	Output	Action	Stakeholders	Assumptions	Indicators	Risks
Promotion of effective land use and livelihood improvement trough sustainable P&W management in intensive and/ or natural systems	**Increasing the effectiveness of authorities/institutions in decision making process regarding P/W production and wood utilization**	Build scientific and technical bases	• Suitability & availability inventories	• Public agencies, Government, Extension organizations • Land owners, land owners associations • Investors and entrepreneurs • Forest management organizations • Local communities • Poplar and willow end-users • Education organizations • Research organizations	• Government agencies willing to collaborate • Proper Land suitability • Agreement by forest owners to allow the establishment of demonstrative plots in their land • Co-financing possibilities • Availability of investment • International cooperation for science, policy and economy • Availability of proper genetic pools for reproduction material	• Available maps, descriptions, database • Quality control on data stored in the data base • Diversification of reproduction material • Degree of international cooperation • Surface of demonstration plots • Representativeness of the demonstration plots • Quantification of target groups for the dissemination campaigns • Degree of investments realized or planned • Legislation drafting started • Degree of acceptance between the stakeholders of the action plans and decision supporting tools	• Unpredictable regulatory framework • Contradictory subsidiary policy to encourage other utilizations of the land • Decreasing demand for poplar and willow products because of the substitute products • No availability for financing possibilities • Conflicts in land use • Unpredictable changes in energy market • Competition in land users and end users • Use of reproductive material that is not sufficiently adapted to the changing environmental conditions
			• Germplasm selection				
			• Reproduction material testing & transfer				
		Pilot systems development	• Demonstrative plots network (timber, bioenergy, remediation, etc.)				
			• Support for landowner & entrepreneurs associations				
			• Sustainability assessment				
		Tools construction and submission	• BPG development				
			• Sustainability assessment for decision making				
			• Action plans for decision makers				
			• Land use planning and management guidelines				
		Public&political awareness campaign	• Material dissemination				
			• Training				
			• Education				
			• Supporting and facilitating market development for P/W plantations and wood				

•	**Improving the management of natural P/W based stands through transfer of knowledge, innovation and capacity building using environmentally sustainable and cost-effective tools**	Assess and develop the scientific/ technical bases	• Inventories/evaluations of genetic resources of native species *vs.* site conditions	• Public agencies, Governmental institutions, Extension organizations • Land owners, land owners associations • Investors and entrepreneurs • Forest management organizations • Local communities • Poplar and willow end-users • Education organizations • Research organizations	• Government agencies willing to collaborate • Proper Land suitability • Agreement by forest owners to allow the establishment of demonstrative plots in their land • Co-financing possibilities • Availability of investment • International cooperation for science, policy and economy • Availability of proper genetic pools for reproduction material	• Available maps, descriptions, database • Quality control on data stored in the data base • Diversification of reproduction material • Degree of international cooperation • Surface of demonstration plots • Representativeness of the demonstration plots • Quantification of target groups for the dissemination campaigns • Degree of investments realized or planned • Legislation drafting started • Degree of acceptance between the stakeholders of the action plans and decision supporting tools	•
			• Monitoring systems in place				
			• Germplasm collection/selection for native species				
		Develop demonstrative ecosystem mgmt. schemes	• Ecological reconstruction demonstration plots				
			• Establishing biodiversity monitoring systems involving various stakeholders (NGOs, owners etc.)				
		Increase public & political awareness	• Develop landscape plans through participatory approach				
			• Recommendations for regulation framework improvement				
			• Production and dissemination of awareness tools				
		Promote social & economic issues	• Develop PA management plans				
			• Enable continuous communication/contacts with local community				
			• Develop a market for social/environmental services of natural/restored ecosystems				

Problems and Justification Summary Table
Central Asian Countries

Problem Identified	Major Issues	Government Strategy	Major Stakeholders	Other Projects in the Sector	Other Donors in the Sector	Justification Components
• Institutional and systematic issues (there is no uniform system for poplar growing, and conservation of natural poplar forests)	• Infrastructure issues • Local community awareness • Forest land share • Technologies • Sorts • Location specific sorts	• State resolutions, Orders of Presidents • Akimati are interested in plantations, Kaz. • States' policy support these projects	• Forestry institutions,	• "Poplar development Programme" Uzb., • Fund for forest activities, Kyrg. (limited fund)	• Kyrgyz-Swiss program (past) • JICA joint forest management (Kyr) now • GEF, WB "Clean development mechanism" project (now) – it includes the component on fast growing species 17 thousand ha poplar plantation yearly (Kyr) • "Tyan shan project" contains poplar plantations (Kyr)	• EU, IFAD
• Need for poplar plantations to satisfy need for construction materials and energy	•	•	• Water institutions	•	• UNDP "Conservation agrobiodiversity in Alatau" (Kaz)	•
• Water shortage	•	•	• Association of farmers	•	•	•
• No experience for conservation,Tugai forests	•	•	• State bodies, private sector, agencies, community, NGOs	•	•	•
• Weak legislative and regulative system for private ownership of forest cultivation	•	•	•	•	•	•
• Institutional weakness – e.g. under the Ministry of agriculture and water resources (Uzb.)	•	•	•	•	•	•

• No guidance/ structure for the control of poplar plantations in the state program (Taj.)	•	•	•	•	•	•
• Create legal framework for poplar plantations	•	•	•	•	•	•
• No institution for poplar development	•	•	•	•	•	•
• Weak financing	•	•	•	•	•	•
• Technological issues	•	•	•	•	•	•

Logical Framework of Action Summary Table
Central Asian Countries

Impact	Outcome	Output	Action	Stakeholders	Assumptions	Indicators	Risks
Assistance to improvement of ecological conditions through a sustainable development of rural communities	1. Improvement of legislative, regulatory and policy	1. Regulatory legal base is developed	1. The analysis of existing legislative base 2. Development and approval of necessary regulatory legal acts 3. Development and approval of State Program on cultivation of poplars and willows	The state bodies, scientific and educational institutes, private sector, civil society		The report, laws, subordinate legislation, the Program	Absence of support of the Government, presence resources (experts, financial, etc.)
		2. Institutional base on poplar and willow cultivation is developed	Studying of the possibility for the development of institutional base Creation of the National Centre on development of poplar and willow landscapes	The authorized state body, scientific institute		The National Center	Отсутствие поддержки Правительства, наличие ресурсы (эксперты, финансовых и др.), межсектариальное взаимодействия Absence of support of the Government, presence resources (experts, financial, etc.), cross-sectoral cooperation
		3. Management plans on poplar and willow plantings are developed for rural communities	1. Inventory (account) 2. Database Creation 3. Mapping (use GIS-TECHNOLOGY) 4. Development of management plans	The state bodies, scientific and educational institutes, private sector, civil society, local communities		Management plans	No performance of management plans, absence of interest of local communities

	2. Development of popular and willow for adaptation to climate change, water resources management, bio-energy use	1. Research on perfection system on poplar and willow cultivation	1. The analysis and an estimation of existing species of local poplars and willows, as well as the socio-economic conditions of the population 2. Testing of hybrids 3. Development of a technology for creation of nurseries and plantings 4. Creation of demonstration sites	The state bodies, scientific and educational institutes, private sector, civil society, local communities, the international organizations		The list of specific species of local poplars and willows, local farmers, diversification of planting material (national and international), demonstration sites, recommendations on technologies, collection of poplars	Presence resources (experts, financial, etc.), cross-sectoral cooperation
		2. Provision of the local community with wood	1. Carrying out afforestation, reforestation, agroforestry	The state bodies, scientific and educational institutes, private sector, civil society, local communities, the international organizations		The areas of protective forest, agroforestry, conservation natural forest, etc.	Absence of the research results, insufficient care for forest, insects and illnesses, absence of water, presence resources (experts, financial, etc.)
		3. Increase of rural community employment rate	1. Estimation of opportunities for the creation of small mills on wood processing in regions 2. Creation of small mills on wood processing in regions	The state bodies, scientific and educational institutes, private sector, civil society, local communities, the international organizations		The report, quantity of shops	Presence of resources (experts, financial, etc.)

	3. Increase the capacity and the public awareness	1. Increase the capacity of stakeholders	1. Development of necessary programs and information materials 2. Carrying out of seminars (workshops) in regions (on sites) 3. Exchange of experience, visiting China, Turkey, etc., tours of the international advisers to Central Asian countries 4. Development of the system of introduction of research results in practice 5. Joining to the international network of distribution of the information 6. Participation in the international processes and meetings	The state bodies, scientific and educational institutes, private sector, civil society, local communities, the international organizations		Programs, information materials, quantity of seminars, quantity of visits to other countries, quantity of the invited experts, the created system of introduction of research results, access to database, quantity of participation at the international meetings	Presence of resources (experts, financial, etc.)
		2. Increase Public awareness	1. Development of information materials (booklets, brochures, bulletins, etc.) 2. Publications 3. MASS-MEDIA	The state bodies, scientific and educational institutes, private sector, civil society, local communities, the international organizations		Quantity of booklets, brochures, bulletins, etc., articles, programs in mass-media	Presence of resources (experts, financial, etc.)

	4. Increase cross-sectoral cooperation	1. Interaction of state, private, public sectors and the international organizations	1. Creation of cross-sectoral Steering Committee 2. Development of Committee Charter, the Order, the Programs	The state bodies, scientific and educational institutes, private sector, civil society, local communities, the international organizations		Steering Committee, the Charter, the Order, the Programs	Absence of interest of the state, private and public sectors and the international organizations

Problems and Justification Summary Table
Georgia - Egypt - Turkey

Problem Identified	Major Issues	Government Strategy	Major Stakeholders	Other Projects in the Sector	Other Donors in the Sector	Justification Components
GEORGIA						
• Establish policy framework • Define priority areas suitable for poplar (Georgia has already a forest inventory to be updated) • Allocate areas for Intensive plantations (government) allocate public land to farmers to grow poplar	Negative: • No coherent forestry policy • Insufficient existing legislation • Lack of relevant funds Positive: • Scientific research potential • Existing methodology for establishing plantations	• A process to improve legislation has already started • Minister of environmental protection is working on a special document on development of forestry sector in Georgia. It is a preliminary document to policy and it will be sent to Parliament soon • The Government is always ready to cooperate on this issues with all stakeholders, local, regional or international	• Ministry of Environmental Protection, Forestry Department (General management, including afforestation • Georgia State Agrarian University and Forestry Institute (Scientific research work) • Private Companies with wood licenses to harvest that work according to special plans • Potential stakeholders, (small owners, farmers) that can be motivated in future to grow poplar and willow	• General projects: • A pilot project on giving communal forest to jurisdiction of villagers (funded by GTZ) • Afforestation of two degraded areas (funded by WWF)	• FAO (Executing Agency) • World Bank Agency • EU • GTZ • KFW (France)	•

Problem Identified	Major Issues	Government Strategy	Major Stakeholders	Other Projects in the Sector	Other Donors in the Sector	Justification Components
EGYPT						
• Wood imports are too expensive as local wood is unavailable • Lack of intensive plantations • Lack of water resources; Disposing and recycling of sewage water (phyto-remediation)	Negative: • Existence of limited number of clones • Limited funding resources Positive: • Conservation of environment because of phytoremediation	• Strengthen introduction of new species and clones (already initiated by the Ministry of Agriculture) • Raising public awareness about the indirect benefits of planting trees including poplar and willow through the public media • Egypt is member of IPC	• Ministry of Irrigation and water resources (stabilizing banks of the main irrigation channels) • Ministry of Agriculture and land reclamation (planting wood lots near sewage plans; introduction of new species and clones) • Farmers (planting polar and willow trees for shade and small irrigation channel • University of Alexandria • Agriculture Research Institute	• FAO TCP project on Forest Policies Establishment (ended in March 2009) • National project: "Sand dune stabilization in Sinai Peninsula" (Ended in 2006)	Only potential donors available at the moment: • FAO (Executing Agency) • World Bank • EU Previously: • US Aid • Canada • ITTO • Finland • France	•

Problem Identified	Major Issues	Government Strategy	Major Stakeholders	Other Projects in the Sector	Other Donors in the Sector	Justification Components
TURKEY						
• Lack of government support to strengthen poplar cultivation • Need for detailed market analysis • Need for fibres and bio-energy, capacity building in Short Rotation Crops • Inventory of natural and planted poplar • Need to strengthen poplar certification from poplar	Negative • Lack of support to research • Negative public & political perception about planted forests, including P&W • Concerns of water management, hydrology & water protection • Lack of genetic resources for biomass end uses and for poplar clones resistant to dry conditions • Lack of state control on nurseries and plantations Positive • Good resources of genetic material for industrial wood use • Educated researchers • Existing wide potential areas suitable for poplar growing • Existing skilled and experienced poplar growers • Existing sawmills and plans for processing poplar wood	• Government is conducting a huge afforestation program (2 millions ha in 5 years) however this not includes fast growing species • Turkey is member of IPC	• Ministry of Environment and Forestry (Afforestation/ Reforestation; Nature Protection; Research; Forest Management and Protection) • Universities • NGOs • Smallholders • Private Companies	• The PFGFTRI, Izmit, is carrying the following projects: • 2 Projects on poplar breeding • A new poplar project to be established on biomass and bio-energy • 1Project on salt tolerance of poplar • 1 Project on silviculture of poplar • 2 Projects on poplar propagation techniques (1 *Populus tremula* and 1 on *Populus nigra*) • 1 Project on biotechnology • 1 Project on comparing nutrient needs of crops and poplar • 1 Project to define optimal rotation length of 5 poplar clones in different spacing	• FAO (Executing Agency) • World Bank Agency • EU	•

Logical Framework of Action Summary Table
Georgia - Egypt - Turkey

Impact	Outcome	Output	Action	Stakeholders	Assumptions	Indicators	Risks
Egypt							
• Ensure environmental sustainability of water resources through the use of Salicaceae and increasing people wellbeing	• Increase wood production, job opportunities and improve environment quality	• 1. Capacity building • 2. Improve growth and wood quality through genetic resources availability • 3. Improve field work activities • 4. Control water erosion and reduce land contamination	• 1.a Training of scientists with emphasis to young researchers (including study tours, fellowships...). Training of workers and administrative staff • 2.a Import of planting material and management information on poplar and willow from experienced countries • 3.a Establishment of trials and carrying experiments to adapt the new species and clones to the local conditions • 4.a Establishing poplar woodlots and willow plantations	• Ministry of Irrigation and Water Resources (stabilizing banks of the main irrigation channels) • Ministry of Agriculture and Land Reclamation (planting wood lots near sewage plans; introduction of new species and clones) • Farmers (planting polar and willow trees for shade and small irrigation channel • University of Alexandria • Agriculture Research Institute	• Establishment of good protocols for plantations for phyto-remediation • Field staff well trained • Exchange of technical and scientific information • Import of quality reproduction material	• Reduction of both polluted water and soils • Increasing of rate of survival and growth rate • Increasing of wood availability • Increasing of farmers income • Improving of scientific knowledge	• Lack of international financial support • Lack of Government interest • Lack of land owners interest

Impact	Outcome	Output	Action	Stakeholders	Assumptions	Indicators	Risks
		• 5 Raising of public awareness	• 4.b Conducting water, soil and biomass analysis • 5.a Extension Services • 5.b Use of public media				
Georgia							
• Achieving sustainable livelihood and people wellbeing through poplar and willow culture	• Increasing state and private sector wood industries and development of smallholders economy	• 1. Review environmental and forestry policies • 2. More effective inventory and monitoring • 3. Country capacity building • 4. Qualification of scientists and technicians • 5 Establishment of agroforestry plantations	• 1.a Reform forestry legislation • 2.a Strengthen forest inventory activities • 2.b Define suitable plantation areas for farmers near villages • 2.c Define priority areas for intensive plantations • 3.a Extension activities for trainers and farmers 4.a Training of both scientists and technicians with emphasis to young people (including study tours, fellowships...). • 5.1 Selection of poplar and willows species and clones • 5.2 Establishing nurseries • 5.3 Establishing trials	• Ministry of Environmental Protection and Natural Resources • Ministry of Agriculture • Private wood industries • Smallholders (locals) • Research institutions	• Policy and legislation framework well established • Selection of proper areas for agro-forestry • Establishment of good protocols for plantations • Research and field staff well trained • Stable political conditions	• Government is submitting a new forest law • Farmers are planting poplars and willows	• Lack of international financial support • Lack of Government interest • Destabilization of the area

Impact	Outcome	Output	Action	Stakeholders	Assumptions	Indicators	Risks
			• 5.4 Establish pilot smallholders plantations • 5.5 Establish poplar/willow plantations in smallholder farms				
Turkey							
• Contribution of forestry and agro-forestry to sustainable development	• Increasing poplar and willow culture and use	• 1. New poplar and willow clones • 2. Increase wood production and carbon sequestration capacity	• 1.a Establishing clone trials • 1.bTesting the end-use of new poplar and willow clones • 1.c Establishing germ-plasm collections • 1.d Establishing new nurseries • 2.a Assessment of the natural and planted poplar and willow area • 2.b Assessment of potential afforestation and restoration areas • 2.c Establishing poplar and willow plantation areas • 2.d Establishing of poplar and willow agroforestry systems • 2.e Field survey of lands, pest and diseases • 2.f Certification activities	• Ministry of Environment and Forestry • NGOs • Smallholders • Private Companies • End users • Research Institutions • Universities • International institutions	• Increased availability for new clones • Increase willingness of smallholders • Land availability	• Size of allocated areas for plantations • Income per household • Increase of yield/ha	• Lack of funds • Unwillingness of smallholders • Decreasing of governmental support

Impact	Outcome	Output	Action	Stakeholders	Assumptions	Indicators	Risks
			• 2.g Training for farmers • 2.h New regulations for farmers				
		• 3. Strengthening international collaboration	• 3.a Organize international meetings on poplar culture • 3.b Exchange of expertise • 3.c Harmonize methodologies and techniques				
		• 4. Qualification of young scientist	• 4.1 Training courses				

International Workshop "Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian countries"

Prepared by:

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27–31 July 2009

POPLAR AND FAST GROWING FOREST TREES RESEARCH INSTITUTE
IZMIT - KOCAELI, TÜRKİYE

FIELD TRIP PROGRAMME FOR TENTATIVE AGENDA

29.07.2009
FIELD TRIP 1: AKYAZI DISTRICT

08.30: Departure

09.00 – 09.30
Stop 1: Agroforestry (Poplar + Maize + Hazel Nut)
Location: Yazili /Akyazi

09.45 – 10.15
Stop 2: Agroforestry (Poplar + Maize)
Location: Yazili / Akyazi

10.30 – 11.00
Stop 3: Poplar Nursery
Location: Cildirlar / Akyazi

11.15 – 11.30
Coffee Break

11.30 – 12.00
Stop 4: Poplar Plantation
Location: Kepekli / Akyazi

12.30 – 14.00
Lunch
Akyazi / Kuzuluk

14.30 – 15.00
Stop 5: Sawmill (Sahin Wood Industry Company) – Row plantation
Location: Bedilkazanci / Akyazi

15.15 – 15.45
Stop 6: Poplar Plantation
Location: Bedilkazanci / Akyazi

16.00 – 16.30
Stop 7: Poplar Plantation
Location: Bedilkazanci / Akyazi

16.30 – 17.00 Coffee break

17.15 – 18.00
Stop 8: BIZON Wood Industry Joint-Stock Company
Location: Gebesler / Adapazari

AKYAZI DISTRICT

Akyazı is a town of Sakarya Province located at the South East of province. Akyazı is surrounded by the mountains at South and by a productive plain at North. This productive plain lies along the South east of Sakarya plain. The Mudurnu river, which divides Akyazı district into two parts is the most important stream of the district.

Poplar plantations are the most widely established in Sakarya plain in Turkey. Sakarya plain has an area of 60130 ha of which nearly 6800 ha (11.4 %). The area is covered by poplar plantations. The most part of these plantations are established by the clone of SAMSUN (*Populus deltoides*).

Some geographic and climatic datas for Bedilkazancı that samples the district are given below:

Province, Town, Village :	: Sakarya, Akyazı, Bedilkazancı
Elevation	: 50 m
Longitude, Latitude	: 40º 59’ 00”, 30º 16’ 20”
Mean Annual Temperature	: 14º C
Extreme Maximum Temperature	: 41.5º C
Extreme Minimum Temperature	: -14.5º C

Mean Annual Precipitation and Humidity: 887 mm, 72 %

East Marmara (includes Akyazi and Iznik districts) is one of the most important region for Poplar development activities in Turkey. The reasons are:

- Ecologic conditions (especially with high water table level) are very suitable for Poplar growing
- Farmers of this region have Poplar culture coming from ancient times.
- Poplar growers have an Institution (Poplar Research Institute) which supports them technically in the region
- The poplar market and wood ındustry are very near to the places where Poplar plantations are established.
- The income and reliability of poplar plantations are much higher than the agricultural crops
- Poplar growers can delay the harvesting of Poplar plantations when Poplar wood prices low level

AKYAZI – STOP 1: AGROFORESTRY IMPLEMENTATIONS

General Information on Plantation		Implemented treatments	
Owner	Fikri Erbay	Land Preparation	Ploughing (70 cm)+Disc-harrow and planting pit in 80-100 cm depth.
Location	Yazılı - Akyazı	Planting time	In November
Agricultural Crops Used	Maize and Hazel Nut	Ploughing	Ploughing+disc-harrow-Raking (April-May). Ploughing+Disc-harrow (October-November)
Establishment Date	November - 2006	Irrigation	No
Plantation Area	10 da	Chemical Control	Two times for first two years (Decis, Folimat)
Clone	Samsun (Populus deltoides)	Fertilizer	400-500 g urine (April), 400-500 g composed fertilizer (N, P, K) for each plant during winter.
Sapling Age	2+1 with root	Pruning	First pruning made in second year, second pruning will be made in 5th or 6th years.
Spacing	6 m X 5 m	Rotation period	8-12 years
End Use	Plywood, blockboard, particle board, pallet, batten		

AKYAZI – STOP 2: AGROFORESTRY IMPLEMENTATIONS

General Information on Plantation		Implemented treatments	
Owner	Tarık Oztekin	**Land Preparation**	Ploughing (70 cm)+Disc-harrow and planting pit in 80-100 cm depth.
Location	Yazılı - Akyazı	**Planting time**	In March 2007
Agricultural Crop Used	Maize	**Ploughing**	Ploughing+disc-harrow-raking (April-May). Ploughing+Disc-harrow (October-November
Establishment Date	March - 2007	**Irrigation**	No
Plantation Area	15 da	**Chemical Control**	In first three years Decis and Folimat were used
Clone	Samsun (Populus deltoides)	**Fertilizer**	400-500 g Urea for each plant every year.
Sapling Age	2+1 with root	**Pruning**	No
Spacing	6 m X 5 m	**Rotation period**	8-12 years
End Use	Plywood, blockboard, particle board, pallet, batten		

AKYAZI – STOP 3: POPLAR NURSERY

General Information on Plantation		Implemented treatments	
Owner	Hikmet DEMIR	**Land Preparation**	Disc-harrow + Ploughing (25 cm)+Disc-harrow +Raking
Location	Cildirlar - Akyazı	**Planting time**	In spring (March)
Establishment Date	Spring – 2008-2009		3-4 weeks after establishment
Nursery Area	10 da	**Weeding and Hoeing**	3-4 times in a growing season in the between of rows
Clones	**Samsun** (Populus deltoides) **I-214** (P.x euramericana)	**Irrigation**	5-6 times in a growing season
Cutting length	25 – 27 cm	**Chemical Control**	Five times in a growing season (Decis, Folimat, Karate, Folidol) (400 liters water + 1 liters chemical)
Spacing	70 cm X 60 cm for Samsun 70 cm X 50 cm for I-214	**Fertilizer**	30 Kg/da NPK (before establishment) End of april 20 Kg/da 26 % nitrat. End of May 20 Kg/da 44 % Urea. End of June: 20 Kg/da Urea. For second year same application
Sapling Price	One year old sapling with the diameter 2-5-3 cm : 0.7 USD	**Other**	Generally saplings are sold when their root and stem are two and one year old respectively. But vigorous saplings can be sold their root and stem are one year old.

AKYAZI – STOP 4: POPLAR PLANTATION

General Information on Plantation		Implemented treatments	
Owner	Ihsan AKSOY	**Land Preparation**	Ploughing (30 cm)+planting pit (1.5 m) + Planting + Disc-harrow.
Location	Cildirlar-Akyazi	**Planting time**	In March
		Ploughing	One ploughing in every year in November and two times disc-harrow in every year.
Establishment Date	March - 2002	**Irrigation**	First two years two times in a growing season
Plantation Area	25 da	**Chemical Control**	Two times for first two years.(Decis, Folimat)
Clone	**Samsun** (Populus deltoides)	**Fertilizer**	First year 200 g, second and third years 500 g inorganic fertilizer
Sapling Age	2+1 with root	**Pruning**	Second year leader shoot correction, fourth and sixth year pruning
Spacing	6 m X 6 m	**Rotation period**	8-12 years
Volume	261.123 m3/ha	**End Use**	Plywood, blockboard, particle board, pallet, batten

AKYAZI – STOP 5: POPLAR PLANTATION

General Information on Plantation		Implemented treatments	
Owner	Tayfun ŞAHİN	**Land Preparation**	Ploughing (30 cm)+planting pit (1.5 m) + Planting + Disc-harrow.
Location	Cildirlar-Akyazi	**Planting time**	In March
		Ploughing	One ploughing in every year in November and two times disc-harrow in every year.
Establishment Date	March - 2002	**Irrigation**	No
Plantation Area	25 da	**Chemical Control**	First three years
Clone	Samsun (Populus deltoides)	**Fertilizer**	First eight year
Sapling Age	2+1 with root	**Pruning**	Second year leader shoot correction, Fourth and sixth year pruning
Spacing	6 m X 6 m	**Rotation period**	8-12 years
Volume	290.948 m3/ha	**End Use**	Plywood, blockboard, particle board, pallet, batten

AKYAZI – STOP 6: POPLAR PLANTATION

General Information on Plantation		Implemented treatments	
Owner	Tayfun ŞAHİN	**Land Preparation**	Ploughing (30 cm)+Digging hole (1.5 m) + Planting + Disc-harrow.
Location	Cildirlar-Akyazi	**Planting time**	In March
		Ploughing	One ploughing in every year in November and two times disc-harrow in every year.
Establishment Date	March - 2002	**Irrigation**	No
Plantation Area	25 da	**Chemical Control**	First three years
Clone	Samsun (Populus deltoides)	**Fertilizer**	First eight year
Sapling Age	2+1 with root	**Pruning**	Second year leader shoot correction, Fourth and sixth year pruning
Spacing	6 m X 6 m	**Rotation period**	8-12 years
Volume	459.942 m3/ha	**End Use**	Plywood, blockboard, particle board, pallet, batten

AKYAZI – STOP 7a: SAHIN SAWMILL COMPANY

Owner	Tayfun ŞAHİN
Location	Kazancıbedil / Akyazi
Establishment date of Sawmill	2003
Area	17da
The number of worker	40
Used Tree Species	80% Poplar, 10% Pine, 10% Broadleaved tree species (Platanus, Fraxinus, Quercus)
Manufactured products	80 % Batten, 20 % Pallet
Purchase price of Poplar wood	100-130 USD (delivering in field)
Sale prices of products	Batten : 160-200 USD / m3 Pallet : 4-13 USD each

AKYAZI – STOP 7b: ROW PLANTATION (WINDBREAK)

Owner	Rifat OZKAN	**Agricultural Crop**	Maize
Establishment Date	2006	**Chemical Control**	First three years
Area	10 da	**Fertilizer**	Urea (for maize)
Spacing	2-2.5 m	**Aim**	To get more income
Clone	SAMSUN (*P.deltoides)*	**End use**	Plywood,blockboard,pallet, chipwood,batten.

AKYAZI - STOP 8 - BIZON WOOD INDUSTRY

With an experience over 30 years in Turkish forestry wood sector, Bizon company operates 3 separate production plants located in Sakarya. Manufacturing plywood, blockboard, film faced concrete form plywood, door frame panels, door posts, timber, edge glued panel and high heat treated wood (cleanwood), company aims to provide contribution to national economy, ensure lasting customer satisfaction and trust; and to enhance its current position in the sector to the further levels.

Established in 1970, one of the first plywood plants of Turkey BİZON A.Ş. Plywood Plant, has been acquired in 1996, it is brought in the national economy with enhanced and renewed production capacity, technology and machinery park. Settled on 70,000 m2 area having 14,000 m2 indoor area, the enterprise manufactures plywood, blockboard, door frame panel, edge glued panel, finger-joint door post and high heat treated wood (cleanwood). The number of workers is 85.

Besides the raw materials which are supplied domestically such as pine, fir, beech, poplar; we also use exotic trees such as okoume, ozigo, terte, eyong etc. in manufacture.Poplar wood precise is 80 and 120 USD delivering in field and plant respectively. Capacity is 800 m3/month plywood and 100 m3/month blockboard.

Plywood, blockboard, door frame panels, door posts, edge glued panel and high heat treated wood (cleanwood) were manufactured In this plant located at Sakarya Akyazı Gebeş Locality.

30.07.2009
FIELD TRIP 2: IZMIT AND IZNIK DISTRICT

Stop 1: Izmit Poplar Nursery and Poplar Experiments
Location: Izmit

11.30 – 12.15
Stop 2: Akbas Packing Company
Location: Iznik / Bursa

12.30 – 13.30
Lunch (At the coast of Iznik Lake)

13.30 – 15.00
Visit of Iznik Museum and Historical places

15.30 – 16.00
Stop 3: Poplar Nursery
Location: Yenisehir / Bursa

16.30 – 17.00
Stop 4: Poplar Plantation (Two years old-Agroforestry)
Location: Alibeykoy / Inegol

17.15 – 17.45
Stop 5: Poplar Plantation
Location: Alibeykoy / Inegol

18.15 – 18.45
Stop 6: Poplar Plantation
Location: Golbasi / Bursa

IZNIK DISTRICT

Iznik is a small town in northwestern Turkey, on the eastern shore of Lake Iznik. It is the modern successor of the important Byzantine city of Nicea (or Nicaea), where the famous Council of Nicea was held in 325 AD.

Population: 44.690

Area: 753 km2

Elevation: 85 m

40°26′ N, 29°43′ E

IZMIT – STOP 1a: POPLAR CLONE TRIAL

Kind of Trial	Poplar Comparison Clone Trial
Establihment Place and Date	Izmit - 1988
The Number of Clone	8
The Number of Replication	3
Spacing	5 m X 5 m
Other	According to the results, SAMSUN was the best clone of trial. This clone was registered as a commercial clone for using in the Poplar plantations

IZMIT – STOP 1b: POPLAR NURSERY

General Information on Plantation		**Implemented treatments**	
Owner	Forest Nursery Directorate - Izmit	**Land Preparation**	Ploughing (40 cm) + Disc-harrow
Location	Izmit	**Planting time**	(February-March)
Establishment Date	1957	**To single**	3-4 weeks after establishment
Nursery Area	78 ha	**Weeding and Hoeing**	Three times (may-July-August)
Clones	Samsun (*Populus deltoides)* I-214 (*P.x euramericana*)	Irrigation	5 times (may-September)
Cutting length	20-22 cm	**Chemical Control**	If any damage occurs
Spacing	180 X 50 cm	**Fertilizer**	Composed fertilizer (NP)
Sapling Price	2 USD (First class)	**Other**	Generally saplings are sold when their root and stem are two and one year old respectively.

IZMIT – STOP 1c: COLLECTION POPULETUM

Owner	Poplar Research Institue
Establishment date and Place	1959 – 1968, Izmit
The Number of Clones	More than 250

IZNIK STOP 2: AKBAS PACKING

Owner **Location** **Establishment date of Sawmill** **Area** **The number of worker**	Recep AKBAS Iznik 1981 750 m2 5
Used Tree Species in workshop	Only Poplar
The price of used Poplar wood	160 USD (delivering in workshop)
Produced product	Packing boxes
Production Capacity	100 tons/month 30 000 boxes / month (150 000 boxes in full capacity)
The price of one box	0.6 Cent

IZNIK-STOP 3: YENISEHIR POPLAR NURSERY

General Information on Plantation		Applicated treatments	
Owner	The ministry of Environment and Forest	**Land Preparation**	Ploughing (25 cm)+Disc-harrow
Location	Yenisehir - Bursa	**Planting time**	In Spring (March)
Establishment Date	Spring – 2008	**To single**	3-4 weeks after establishment
Nursery Area	4 da	**Weeding and Hoeing**	3-4 times in a growing season in the between of rows..Disc-harrowing among the rows
Clones	I-214 (P.x euramericana)	**Irrigation**	Drop Irrigation
Cutting length	25 cm	**Chemical Control**	Supracide (2-3 times in a growing season)
Spacing	160 cm X 40 cm	**Fertilizer**	Before planting: NPK Composed fertilizer) (25 Kg / da). After planting: Ammonium sulphate (25 Kg / da)
Sapling Price	First class. 2.1 USD Second class: 1.8 USD	**Other**	Generally saplings are sold when their root and stem are two and one year old respectively.

IZNIK – STOP 4: (Alibeykoy / INEGOL) POPLAR PLANTATION

General Information on Plantation		Applicated treatments	
Owner	Ibrahim Ok	**Land Preparation**	Ploughing (70 cm)+Disc-harrow and digging holes in 80-100 cm depth.
Location	Alibeykoy / Inegol -	**Planting time**	In March 2007
Agricultural Crop Used	First year: ploughing+disc-harrow (bean+pepper) Second year: ploughing+disc-harrow (bean and pepper)	**Ploughing**	3th-8th years: two times ploughing + raking in a growing season
Establishment Date	March - 2001	**Irrigation**	3-4 times in a growing season
Plantation Area	5 da	**Chemical Control**	No
Clone	I-214 *(P.x euramericana*)	**Fertilizer**	No
Sapling Age	2+1 with root	**Pruning**	No
Spacing	3 m X 6 m	**Rotation period**	8-12 years
Volume	268.051 m3/ha	**End Use**	Plywood, blockboard, particle board, pallet, batten

IZNIK – STOP 5: (Alibeykoy / INEGOL) AGROFORESTRY

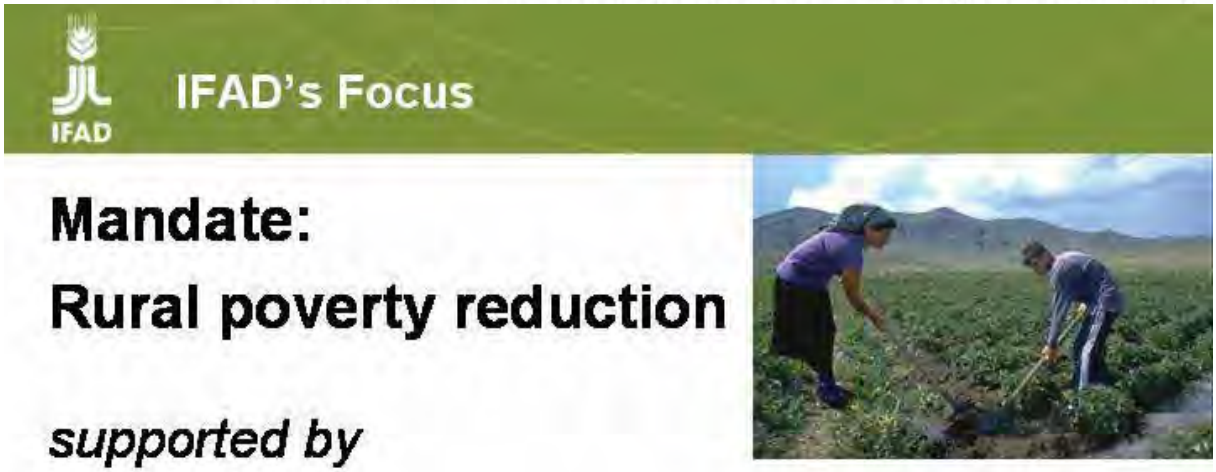
General Information on Plantation		Applicated treatments	
Owner	Necip OLUC	**Land Preparation**	Ploughing (70 cm) + planting pit in 100 cm depth.
Location	Alibeykoy / Inegol -	**Planting time**	In March 2008
Agricultural Crops Used	Green bean + kidney bean +Pepper	**Ploughing**	?
Establishment Date	March - 2008	**Irrigation**	2 times in a month
Plantation Area	7.5 da	**Chemical Control**	?
Clone	I-214 *(P.x euramericana*)	**Fertilizer**	No
Sapling Age	1 (with root)	**Pruning**	?
Spacing	7 m X 3.5 m	**Rotation period**	8-12 years
End Use	Plywood, blockboard, particle board, pallet, batten		

IZNIK - STOP – 6: POPLAR PLANTATION

General Information on Plantation		Implemented treatments	
Owner	State Hydraulic Works	**Land Preparation**	?
Location	Golbasi / Bursa	**Planting time**	In March
Establishment Date	March - 2001	**Ploughing**	Agroforestry used in first three years (Aubergin+Lettuce+Parsley+Green Bean) By taking into consideration the needs of agricultural crops weeding and hoeing applicated in first three years
Plantation Area	16 da	**Irrigation**	No
Clone	I-214 (P. x euramericana)	**Chemical Control**	No
Sapling Age	?	**Fertilizer**	No
Spacing	6 m X 6 m	**Pruning**	No
Volume	107.235		

IFAD

Presentation by Sheila Mwanundu
Senior Technical Adviser, Environment and NRM
International Fund for Agricultural Development (IFAD)



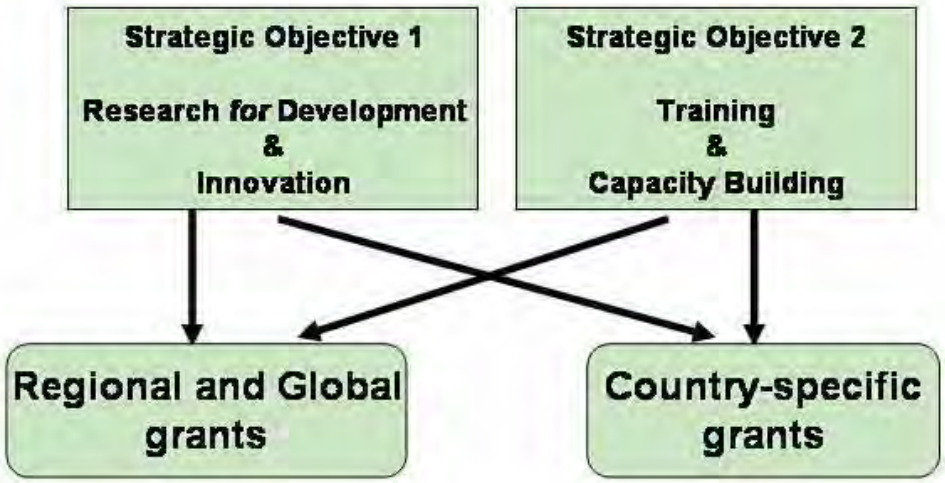
Regional Strategic Focus in Eastern Europe and Central Asian Countries

1. **Natural resource management (climate change, agroforestry, land rehabilitation, etc.)**
2. **Rural financial services and the development of rural microenterprises**
3. **Support land privatizaion and reform process for the rural poor**
4. **Strengthen grass-roots participation**

Main Opportunities for Innovations:

- Agricultural support services
- Establishment/strengthening of pro-poor rural institutions
- Improve access to markets
- Strengthen national and local government
- Co-learning and development

Structure of the grants programme



Concept Note Outline - Large grants
Table of Contents

Title:

I. Background

II. Rationale (links to poverty reduction, strategetic objectives, etc.)

III. Main features, overcoming poverty (goals, objectives, target group, beneficiaries)

IV. Goal and objectives

V. Outputs

VI. Key programme activities

VII. Implementation arrangements (links to IFAD interventions in country/ region)

VIII. Programme costs (co-financing, cost categories, components) together with management capacity

IX. Monitoring and evaluation (reporting and supervision arrangements)

Ongoing loans with agroforestry and forestry-related components

In Eastern Europe

Country	Project	Contacts
Albania	Programme for Sustainable Development in Rural Mountain Areas	Henning Pedersen, CPM, IFAD Work: +39 0654592635 h.pedersen@ifad.org
Georgia	Rural Development Programme for Mountainous and Highland Areas (approved 9/2000) Duration: 2001 - 2010	Henning Pedersen, CPM, IFAD Work: +39 0654592635 h.pedersen@ifad.org
Turkey	Sivas-Erzincan Development Project (approved 9/2003) Duration: 2005 - 2012	Kemal Sandik, Project Director Eskisehir Yolu 9 km Lodumlu, Ankara, Turkey Work: +90 312 4240580 /268 ksandik@tarim.gov.tr

Grant Review Process

- Three GSC meetings are held each year (January, May and November)
- Concept Notes for the large global/regional grants will be reviewed by the **Grant Screening Committee** (GSC) chaired by the Assistant President, PMD and the full design documents goes to a Technical Review Committee (TRC)

- **The next GSC is scheduled for November 2009**

THANK YOU!


Project on poplar cultivation development: possible EU "channels" for funds
Presented by:
Mrs. Lorenza COLLETTI
Italian State Forest Service
International forest affairs office
GCP/INT/059/ITA
International workshop:
"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian Countries"
Izmit, Turkey 27 – 31 July 2009


EU support to projects/programmes has a regional approach:
1. EU Member States;
2. European acceding countries;
3. Neighbour countries;
4. Central-Asian countries.

EU Member States (27)

1. EU Member States (27)

- E. g: Belgium, Estonia, France, Italy, Romania;
- As receivers, use of agric and env instruments:

✓ Regulation (EC) N. 1698/2005 – Rural Development Policy: national/local programmes, mainly aiming to support forest infrastructures and field work, http://ec.europa.eu/agriculture/rurdev/index.en_htm ;

✓ Regulation (EC) N. 614/2007 – LIFE+: projects in the environmental field for knowledge, information and implementation of EU environment legislation. http://ec.europa.eu/environment/life

- As donors, Ministers of Foreign Affairs? Protocols?

2. European acceding Countries (9)

3. European acceding Countries

- 3 candidate Countries (Turkey, Croatia, fYROM);
- 6 potential candidates (Bosnia Erzegovina, Serbia, Montenegro, Kosovo, Albania and Iceland);

✓ IPA- Instruments for pre-accession assistance, http://ec.europa.eu/regional_policy/funds/ipa/index_en.htm ;

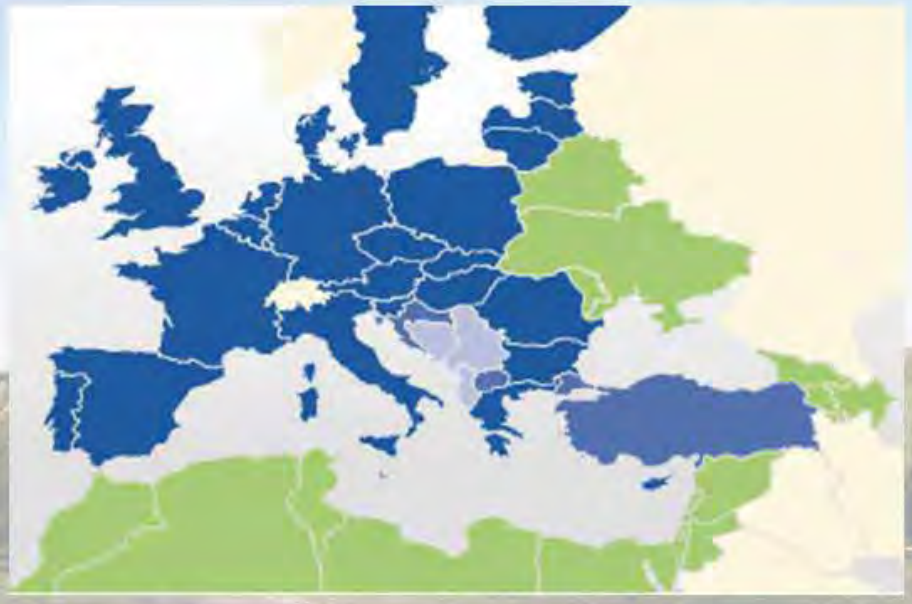
✓ MIFF – Multi Annual Indicative Financial Framework 2007-2012 (e.g. for the year 2010: HR 154.2 M€, TK 653.7 M€, B&H 106 M€ foreseen);

✓ Projects (call for tenders and call for proposals, annual working programme, agric and env);

✓ Twinning and TAIEX programmes (assistance) http://ec.europa.eu/enlargement/index_en.htm

✓ Interreg IV C – developing areas, at their own costs? http://www.interreg4c.net

3. Neighbor Countries (16)



3. Neighbor Countries

- **Countries at the border of EU or of EU acceding countries (e.g. Egypt, Georgia, Syria, Azerbaijan);**
- **Countries are rather heterogeneous (3 groups?);**

✓ **Former TACIS and MEDA programmes, now ENPI (European Neighborhood and Partnership Instrument) and the related policy, ENP http://ec.europa.eu/external_relations/enp/index_en.htm**

✓ **NIF (Neighborhood Investment Facility);**

✓ **For the period 2007-2013 already in place national and regional programmes in different fields, i.e. individual country programmes plus cross-border cooperation strategy;**

✓ **Call for tenders, TAIEX and twinning assistance.**

4. Central-Asian Countries (5)

4. Central-Asian Countries

- 5 rather similar Countries (Kazakhstan, Kyrgysztan, Tajikistan, Uzbekistan and Turkmenistan);
- Common "Strategy for a new partnership" adopted in June 2007 by the European Council;

✓ Area "Environment and water" for projects and regional programmes focussing on: water management/risks, climate change adaptation and bioenergy-renewable energy sources, http://ec.europa.eu/external_relations/central_asia/index_en.htm ;

✓ Common EU Delegation for the 5 countries, publishing calls for tenders and calls for proposals.

Few very basic recommendations

- Think of regional/transnational projects or investigate into national existing EU env/agri programmes;
- Find the right channel, DG, EU desk officers, etc, also by contacting the local EU Delegation or well experiences and trained consultants (lobbying);
- Match the local needs with the priorities of each channel (env= climate change and biodiv protection);
- Strictly respect EU guidelines, templates, deadlines;
- Be fast but patient, "two elephants are meeting"…

… And cross fingers! ;o)

Thanks for the attention!

l.colletti@corpoforestale.it
lorecoll@libero.it

Contribution of Poplars & Willows to Sustainable Livelihoods & Land-use

Funding & Next Actions

Presented by:
(Jim Carle)

GCP/INT/059/ITA
International workshop:
"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian Countries"
Izmit, Turkey 27 – 31 July 2009

Alternative Funding

- **Multi-lateral funding agencies:**
  - **IFAD (Sheila)**
  - **EC (Lorenza)**
  - **The World Bank (loans, technical assistance grants, GEF)**
  - **IsDB (loans, technical assistance grants)**
- **Multi-lateral technical agencies:**
  - **FAO (TCP, GCP [Turkey], UTF, OSRO, UNJ**
- **Bi-lateral donors:**
  - **Italy, GTZ, China, Belgium, France, Turkey, Other?**
- **Country Programmes:**
  - **Departments, Ministries – national forest programmes & strategies**

Preparation of Proposals

- **Concept Note**
  - 2-5 pager of highlights (headings of logical framework, including logical framework
  - donor focus on livelihoods, water, climate change, biodiversity & environment
  - packaging eg "carbon & water management for sustainable livelihoods, bioenergy and land-use"
  - capture attention & obtain pre-approval of agency
  - package different concept notes to different agencies
- **Detailed Proposal Preparation**
  - Feasibility Study
  - Appraisal
  - Approval

Next Steps – Commitment to Action

- **FAO**
  - workshop report
  - website (all resources)
  - preliminary approach to donors
    - IFAD seminar
    - MFA Italy seminar
  - assist countries with concept notes packaged to different donors
  - participate in proposal preparation
  - technical advice on implementing TCPs, GCPs etc
  - P & W book (incl. E. Mediterranean & C. Asia)
- **Participants**
  - political & public lobbying to increase awareness of benefits P&W – eg prepare a briefing report, conduct briefing meeting, share messages & photos with colleagues & relevant institutions
  - use logical frameworks to market project proposals or incorporate into wider development proposals (WB, IsDB, IFAD)
  - inputs to concept notes, proposal preparation


Remember IPC Website:
http://www.fao.org/forestry/ipc/en/
Thank you for your Attention!

Appendix I –

International Poplar Commission

The International Poplar Commission

Alberto Del Lungo

International Poplar Commission (IPC)

- On mandate of 9 European member countries, FAO established in 1947 the International Poplar Commission (IPC)
- FAO hosts the technical secretariat of IPC
- Today IPC accounts 37 member countries spread in all the temperate zones of the world
- The main mandate of IPC is to strengthen synergies between develop and developing countries and enhance the transferring of technical and scientific information among poplar stakeholders
- IPC works through FAO, under the United Nations mandate, to improve the people livelihoods especially in developing countries by transferring knowledge and technology from countries with long tradition of poplar culture to developing countries
- After more than 60 years of activity, IPC is still working in line with both the mission of United Nation and with the United Nation Millennium Development Goals developed by United Nation at the beginning of years two thousands

IPC structure and formal activities

- IPC Executive committee is elected by representatives of member countries every 4 years
- IPC Chair is elected by Executive Committee members. Mr Stefano Bisoffi, from Italy, is the actual Chair. His mandate will end in 2012
- IPC Executive Committee meets every two years
- IPC organises a scientific and technical meeting every four years in one of the member countries. All member countries and poplar stakeholders are invited to attend
- Based upon indication and needs of member countries, IPC promotes forestry policies on poplar culture
- IPC is the mean of United Nations to promote poplar and willow culture

Council
49 Member countries

Conference
191 Member countries + EU

FAO

Committee on Forestry

RECOMMENDATIONS
- Sound
- Well targeted
- Specific
- Achievable

FUNCTIONS
- ✓Study scientific, technical, social and economic aspects of poplar & willow cultivation
- ✓Promote exchange of ideas and material among research workers, producers & users
- ✓Arrange joint research programmes
- ✓Conduct congresses and study tours
- ✓Report and make recommendations to the FAO Conference
- ✓Make recommendations to NPCs and Governments through FAO

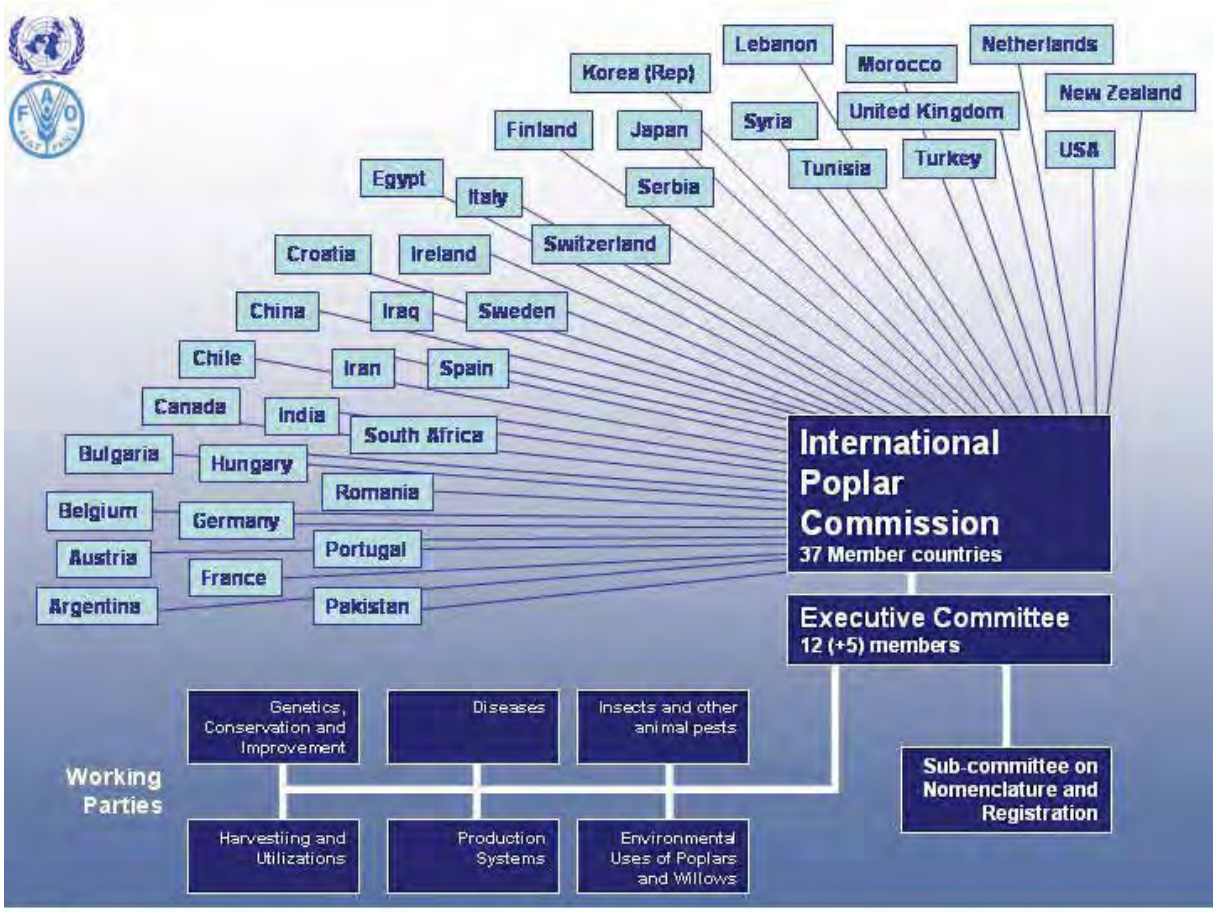
International Poplar Commission
37 Member countries

Executive Committee
12 (+5) members

Working Parties

- Genetics, Conservation and Improvement
- Diseases
- Insects and other animal pests
- Harvesting and Utilizations
- Production Systems
- Environmental Uses of Poplars and Willows

Sub-committee on Nomenclature and Registration



National Poplar Commissions

Every IPC member country is connected to IPC through a National Poplar Commission (NPC)

NPCs are composed by Institutions, Research Bodies, Private Owners and all stakeholders related to poplars and willows

NPCs should:

- **Feel themselves parts of a network**
- **Participate in the activities of the IPC**
- **Support Executive Committee members and Working Party activities**
- **Undertake bi-lateral, multi-lateral initiatives, organize regional meetings**

Dissemination of scientific and technical information

Recent publications:

- **Damaging poplar insects**
  http://www.fao.org/forestry/foris/pdf/ipc/damaging_poplar_insects_eBook.pdf
- **Field handbook on poplar harvesting**
- **http://www.fao.org/docrep/011/k3305e/k3305e00.htm**
- **Poplars and willows (re-edition)**
  The first 3 chapters are available on the internet web site for download:
  http://www.fao.org/forestry/32608/en/

www.fao.org/forestry/ipc

An important mean to disseminate technical and scientific information on poplars and willows is the IPC website a web portal where it is possible to:

- **Download all the available publications**
- **Find an retrive most of the relevant meetings on poplars and willows in the world**
- **Find most of the IPC reports published from 1947 up to date**
- **Link to the National Poplar Commissions**
- **Find names of poplar scientists of the world**

Participation in the IPC

FAO encourages participation with NPCs, selected institutions and specialists to undertake key activities to achieve the outputs and outcome

Thank you in anticipation for your kind participation
We look forward to working with you

Alberto.DelLungo@fao.org
www.fao.org/forestry/ipc

Fifth International Poplar Symposium

IUFRO Poplar and Willow Genetics Working Party 2.08.04

DIVISION 2 - PHYSIOLOGY AND GENETICS

The Global Network for Forest Science Cooperation

2.08.04 – Poplars and willows

Coordinator:
Brian Stanton, United States
Deputies:
Gail Taylor, United Kingdom
Theo Verwijst, Sweden
Francisco Zamudio, Chile

Working Party 2.08.04 brings together all aspects of research in IUFRO on breeding and genetic resources of *Populus* sp. and *Salix* sp. Major functions of this Unit are to faciliate:

1. Information flow on breeding and selection, genomics, and conservation,

2. Exchange of plant material and,

3. Provide for informative meetings, workshops and field trips.

IPS-I, 1995

IPS-II, 1999

IPS-III, 2002

Swedish Agricultural University, Uppsala, Sweden

IPS-IV, 2006

Nanjing Forestry University, Nanjing, China

IUFRO

Fifth International Poplar Symposium

Poplars and willows: from research models to multipurpose trees for a biobased society

Orvieto, Italy, 20-25 September 2010

Organised by:

Agricultural Research Council of Italy (CRA)
National research Council of Italy (CNR)
University of Tuscia, Viterbo
Poplar National Commission
FAO-ONU
The International Union of Forest Research Organisations's Poplar and Willow Genetics Working Unit (2.08.04)

IPS-V

Orvieto, Italy

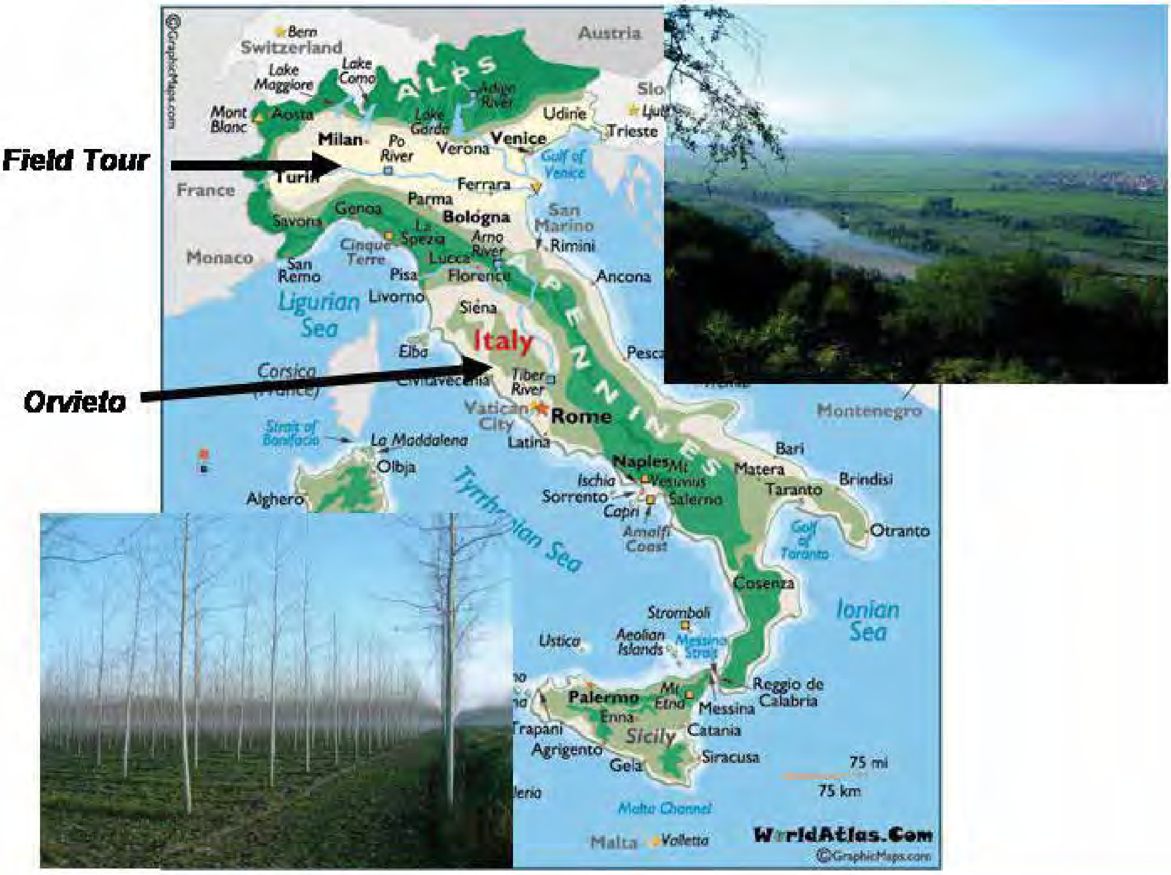
20-25 September, 2010

Hosts:

National Research Council (CNR) - Institute of Forest & Environmental Biology

University of Tuscia

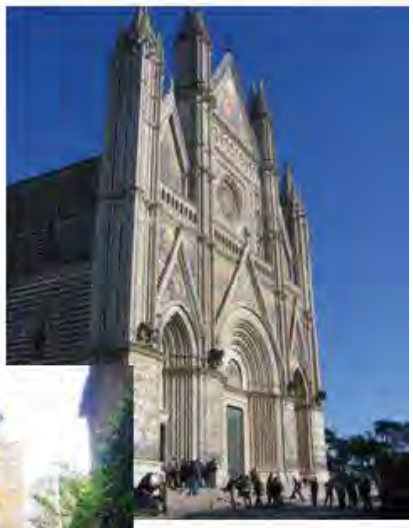
Agricultural Research Council (CRA)


Field Tour
Orvieto
Switzerland
Austria
France
Monaco
Italy
Milan
Turin
Venice
Verona
Ferrara
Parma
Bologna
Genoa
Florence
Pisa
Lucca
Livorno
Siena
Rome
Naples
Salerno
Sorrento
Bari
Brindisi
Taranto
Matera
Otranto
Cosenza
Palermo
Messina
Catania
Siracusa
Agrigento
Trapani
Ligurian Sea
Tyrrhenian Sea
Ionian Sea
APENNINES
Montenegro
Ancona
Rimini
San Marino
Trieste
Udine
Sicily
Malta
WorldAtlas.Com


Venue: medieval town of ORVIETO
Orvieto is 100 km North of Rome and 150 km south of Florence, along the fast train line from Rome to Florence.
Post-meeting tour will end in Casale Monferrato, where the Poplar Research Institute is located, about 60 km away from the airports of Milan and Turin

Venue: medieval town of ORVIETO

Congress palace



Cathedral

IUFRO

Topics

Possible scientific sessions, relating to basic and applied research subjects, are as follows:

1) Population genetics, biodiversity evaluation and conservation of genetic resources
2) Poplar genomics for breeding and selection
3) Poplar biotechnology for a low-carbon industry: wood, bio-fuels, bio-chemicals
4) Poplars and the environment: how much green is green?
5) Tree-pest interactions and signalling: lessons to improve pest resistance
6) *Salicaceae* as model trees for floral pathways and sex determination
7) Innovative production systems for low input tree crops
8) International cooperation for poplar research and applications

Scientific Committee

M. Teresa Cervera (Spain)
Reinhart Culemans (University of Antwerp)
Stefan Jansson (University of Umea)
Francesco Loreto (CNR)
Nelson Marmiroli (University of Parma)
Lu Meng Zhu (Chinese Academy of Forestry)
Michele Morgante (University of Udine)
Andrea Polle (University of Goettingen)
Steve Strauss (Oregon State University)
Marc Villar (INRA)
Ian McIvor (New Zealand)
Francisco Zamudio (Chile)
Gail Taylor (UK)

Poplar Council Task Group

Jim Richardson
Jud Isebrands

Conference Committee

Giuseppe Scarascia-Mugnozza (local host)
Stefano Bisoffi (CRA and IPC chair)
Giuseppe Nervo (CRA)
Enrico Brugnoli (CNR)
Maurizio Sabatti (University of Tuscia)
Federico Radice-Fossati (It. National Poplar Commission)
Jim Carle (FAO)
Alberto Del Lungo (FAO - IPC Secretariat)
Franco Alasia (AssoBiomasse)
(Nanjing University)

Tentative programme

20/9 Introduction and plenary session with an introductory invited speaker; wine tasting in the evening

21/9 Plenary session with 2 speakers, then parallel sessions afternoon short excursion (to *P. nigra* natural stands on the Paglia river) or visit Orvieto; social dinner

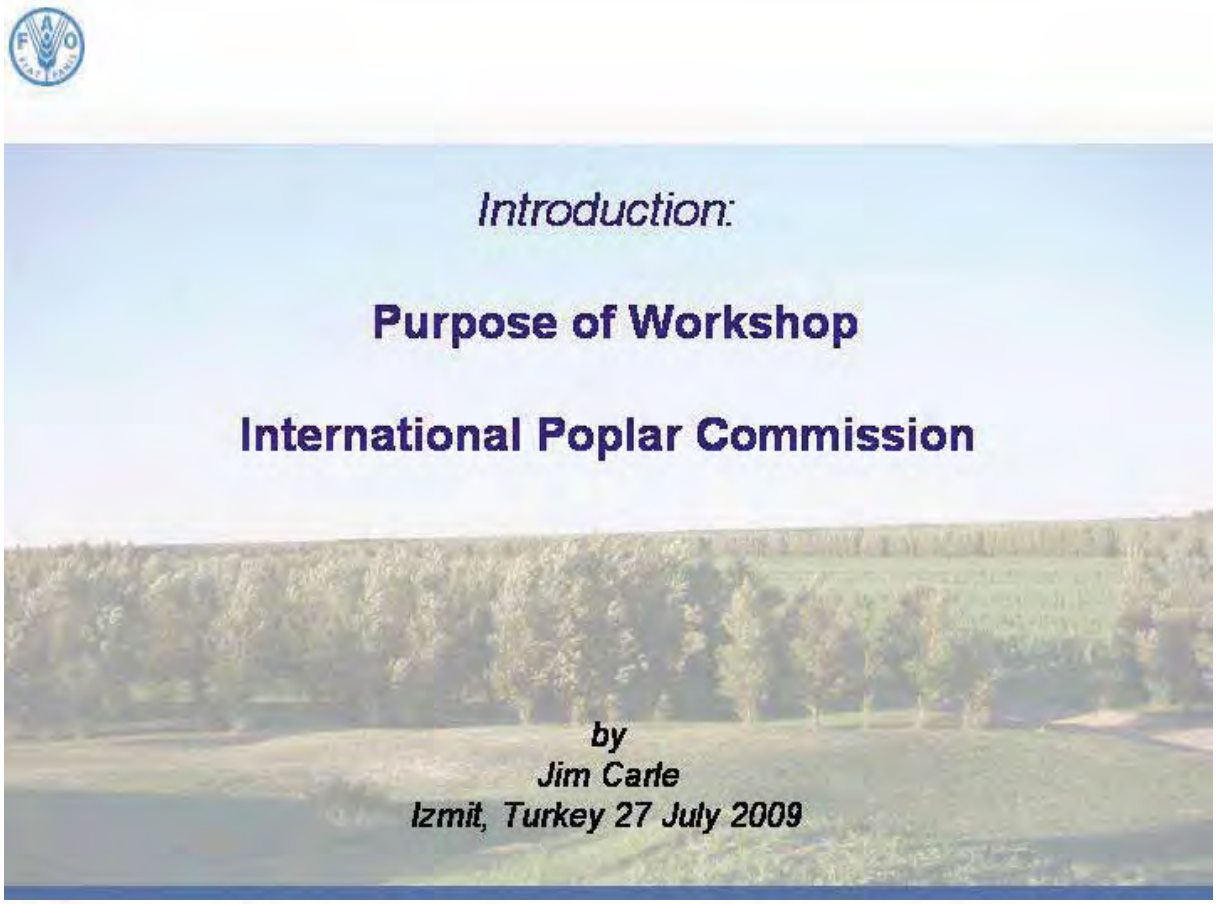
22/9 Plenary session with 2 speakers, then parallel sessions visit of the IBAF Institute and dinner

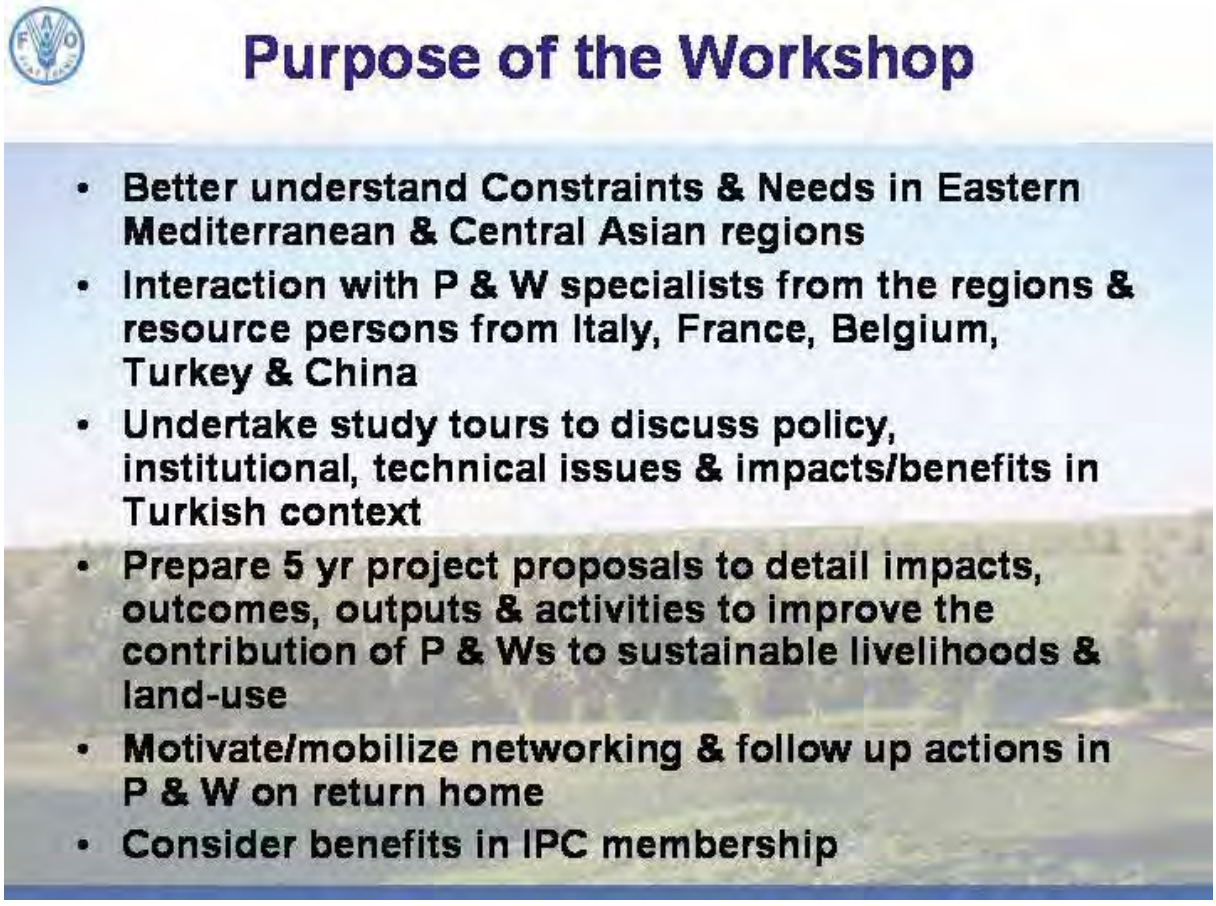
23/9 Travelling to North Italy and visit of white poplar stands and pulp mills in Tuscany

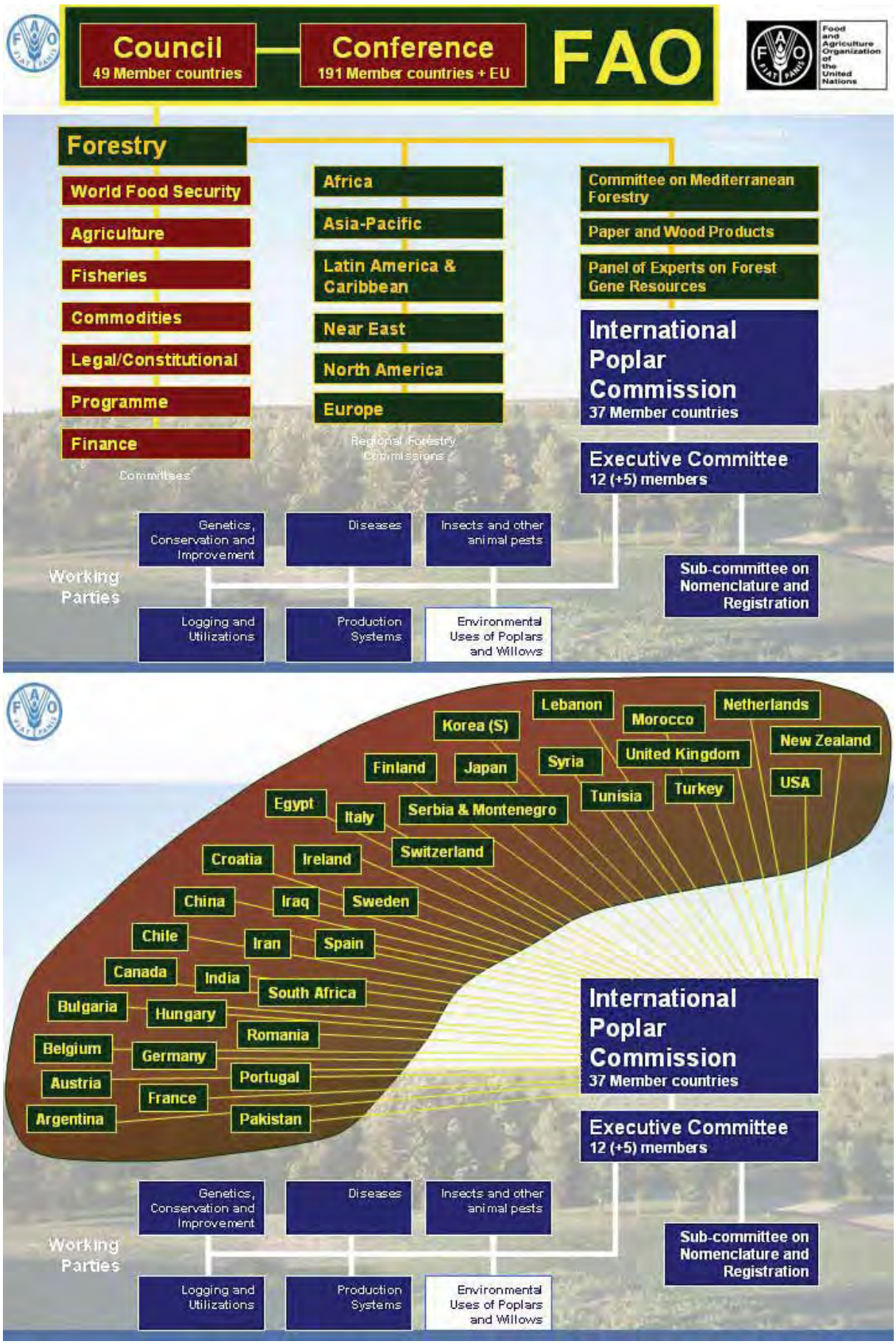
24 & 25/ Field trip in Northern Italy with visits to Poplar Institute in Casale M., clonal field trials, plantation and natural stands; visit to wood industry, bioenergy and biorefinery plants; phytoremediation pilot systems

See you in Orvieto!!

Jim Carle: International Poplar Commission, and Objectives of the Workshop






Council
49 Member countries
Conference
191 Member countries + EU
FAO
Food and Agriculture Organization of the United Nations
Forestry
World Food Security
Agriculture
Fisheries
Commodities
Legal/Constitutional
Programme
Finance
Committees
Africa
Asia-Pacific
Latin America & Caribbean
Near East
North America
Europe
Regional Forestry Commissions
Committee on Mediterranean Forestry
Paper and Wood Products
Panel of Experts on Forest Gene Resources
International Poplar Commission
37 Member countries
Executive Committee
12 (+5) members
Working Parties
Genetics, Conservation and Improvement
Diseases
Insects and other animal pests
Logging and Utilizations
Production Systems
Environmental Uses of Poplars and Willows
Sub-committee on Nomenclature and Registration
Lebanon
Morocco
Netherlands
Korea (S)
New Zealand
Finland
Japan
Syria
United Kingdom
USA
Egypt
Tunisia
Turkey
Italy
Serbia & Montenegro
Croatia
Ireland
Switzerland
China
Iraq
Sweden
Chile
Iran
Spain
Canada
India
South Africa
Bulgaria
Hungary
Romania
Belgium
Germany
Portugal
Austria
France
Argentina
Pakistan
International Poplar Commission
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12 (+5) members
Working Parties
Genetics, Conservation and Improvement
Diseases
Insects and other animal pests
Logging and Utilizations
Production Systems
Environmental Uses of Poplars and Willows
Sub-committee on Nomenclature and Registration

Mandate of IPC

- Study scientific, technical, social & economic aspects of poplar and willow cultivation;
- Arrange joint research programmes (NB: links with International Poplar Symposium, IFURO);
- Promote exchange of ideas & material among research workers, producers & users;
- Stimulate organization of congresses & study tours; and
- Report & make recommendations to poplar researchers, growers & users.

Mechanisms of IPC

- Formal Sessions each 4 years
- Executive Committee Meetings each 2 years
- 37 National Poplar Commissions
- 6 Working Parties
- Sub-committee on Registration and Nomenclature
- International & National Study Tours
- Joint research
- Publications
- FAO-Italian Project in support to IPC

44th IPC Executive Committee Meeting




23rd IPC Session: Opening Plenary (1)




23rd IPC Session: Opening Plenary (2)

23rd IPC Session: Technical & Poster Sessions

23rd IPC Session: Working Party Business Meetings






23rd IPC Session: Banquet with Senior Politician




IPC 23rd Session: Final Plenary (2)

Study Tour: Beijing Forestry University

Study Tours: Descriptions of Stops

Study Tours: 3 North Shelterbelt Programme (1)

Study Tours:
3 North Shelterbelt Programme (2)

Study Tours:
Poplar Plantations

Study Tours
Agroforestry

Study Tours
Poplars in Urban Amenity Plantings

Study Tours
Willows




Study Tours:
Village Based Industries










Study Tours
Village Based Industries

Study Tours
Corporate Industries - Plywood

Study Tours
Corporate Industries: Board Products

Study Tours:
Corporate Industries - Pulp & Paper

Study Tours: Yangtze, Yellow & Hue Rivers- Mountains to Sea




Study Tours
Daily Technical Debriefings



Study Tours
Poplar Museum





Study Tours
People Interest





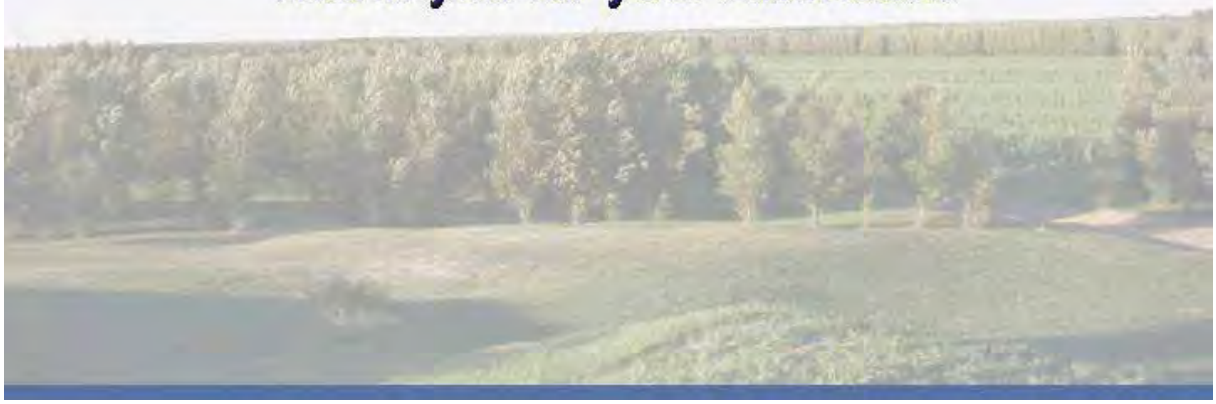




IPC Website: http://www.fao.org/forestry/ipc/en/

23rd Session: http://www.fao.org/forestry/ipc2008/en/

Thank you for your Attention!



Italy-FAO Poplar and Willow Project to Enhance the Contribution of Poplars and Willows towards Sustainable Livelihoods and Land-use in the Eastern Mediterranean and Central Asia

Alberto Del Lungo
Technical Advisor
GCP/INT/059/ITA

International workshop:
"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian Countries"
Izmit, Turkey 27 – 31 July 2009

Project Idea

- **Support the International Poplar Commission**
- **Promote research & exchange between researchers, producers and users**
- **Study scientific, technical, social & economic aspects of Poplar & Willow cultivation**
- **Strengthen collaboration & information exchange between IPC Working Parties, National Poplar Commissions & collaborating partner bodies & agencies, incl. *Silva Mediterranea*, International Poplar Symposium (IPS), IEA Bioenergy Agency**
- **Improve contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian Countries**
- **MDG 1 ...*eradicate extreme poverty and hunger***
- **MDG 7 ...*ensure environmental sustainability and develop global partnerships for development***

Delivered Activities

- Update, upgrade & expand IPC website (working parties, NPCs, publications, databases etc), still ongoing
  www.fao.org/forestry/ipc
- Provide technical support to IPC Secretariat & Scientific Committee for 23rd Session of IPC (interpretation, developing country assistance, publications, translations etc)
  www.fao.org/forestry/ipc2008
- Support countries from E. Mediterranean and C. Asia to attend 23rd Session IPC, Beijing, China 2008
- Review & update web-based databases on Poplars & Willows (maintained by the Italian Poplar Research Institute), still ongoing
  http://www.fao.org/forestry/19227/en/
- Support major publication "Poplars and Willows in the World", still ongoing
  http://www.fao.org/forestry/32608/en/
- Complete e-book "Damaging Poplar Insects – Internationally Important Species"
  http://www.fao.org/forestry/38255/en/

Ongoing Activities: International Workshop

Organization of an International Workshop in Izmit, Turkey at the National Poplar Institute with:

- **Participation of poplar specialists from more advanced countries on Poplar and Willow culture (Italy, France, Belgium, China and Turkey)**
- **Participation of poplar specialists from Mediterranean and Central Asian countries: Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Uzbekistan, Bosnia and Herzegovina, Croatia, Estonia, Romania and Egypt**

What Next?

- **Participants to work with their Governments to review policies, institutions, technical issues & integrate P & W into their National Forest Programmes and higher priority in development**

- **Participants to pursue funding support of project proposals with:**
  - Italian Government
  - European Union
  - IFAD
  - World Bank
  - Donor countries
  - Other funding agencies

- **Seek FAO and IPC technical support in follow up**
- **Consider membership (if not already) to IPC**

THANK YOU

BOSNIA AND HERZEGOVINA

Poplar & Willow in Bosnia and Herzegovina

Prof. dr. Dalibor Ballian
Faculty of Forestry, University of Sarajevo,
71000 Sarajevo, Bosnia and Herzegovina

Bosnia and Herzegovina

have placed at Northwest part of Balkan peninsula

between 42 26' and 45 15' of latitude

and between 15 44' and 19 41' longitude

is mostly mountainous country:

mountains 42%

hilly regions 24%

plains 5%

rocky terrain 29%

average height above sea level is 500 m

highest peak is at Maglić mountain with 2387 meters a.s.l.

Whole territory of forestlands is 2. 501. 000 hectares
Approximately 50% of territory

- commercial forests at 1.130.000 ha

- degraded forests at 841.000 ha

- bareland at 530.000 ha

natural poplar forests, estimate 4000 ha

and plantations 400 ha

natural willow forests, estimate 6000 ha

and plantations 80 ha

length of rivers and creeks
is around 11.000 ha

Poplar and willow in Bosnia and Herzegovina are growing at alluvial, sand soils, along rivers, plains and lower hilly regions

..habitats areas for poplars and willows are only in valleys of bigger rivers, as Drina, Bosna, Vrbas, Una, Sana, Sava and Neretva.

..with total length around 1200 km

Conservation of genetic resources

In 1997 and 1999 as a result of co-operation with colleagues from Faculty of Forestry, University of Zagreb, in areas of Sarajevo, Kakanj and Zenica, 70 black poplar trees were selected.

- all of selected trees are old, except six young trees from old coal mine in City of Kakanj

From those 65 trees more than 60 were successfully cloned (Krstinić and Kajba 1997)

In 2006, we create the first clonal archive, we used 26 natural populations of black poplar (*Populus nigra* L.) from Bosnia and Herzegovina, 11 hybrid poplars and three exotic species of poplars.

Archived populations: 1 Konjic, 2 Čapljina, 3 Sarajevo, 4 Ilidža, 5 Visoko, 6 Kakanj, 7 Rudnik, 8 Bilješevo, 9 Babina Rijeka, 10 Zenica, 11 Maglaj, 12 Doboj,13 Osanica, 14 Kapači, 15 Tegare, 16 Bratunac, 17 Lukavac, 18 Gračanica, 19 Velika brijesnica, 20 Travnik, 21 Bugojno, 22 Jajce, 23 Podmilačje, 24 Krupa, 25 Teplica, 26 Banja Luka

The main aim of the project is:

I) Preservation of the genetically diversity of the native black poplars from the area of Bosnia and Herzegovina through the archived *ex situ*.

II) Creation of the archive *ex situ* with the purpose of reintroduction of the black native poplars in the time when they needed.

We planted a total of 6,885 cuttings: after one month 4,270, or 62.02%, were still alive, while after the second month there were 3,480 surviving cuttings (50.54%), and after the third month, 3,427 (49.77%).

The greatest mortality happened in the first and second months even though we applied every agro means to ensure survival. If, however, we exclude the hybrid poplars, the success is even lower, which can be explained by the age of the planting material and non-use of rooting stimulants. Nevertheless, the results are encouraging, and after the rooted plants grow beyond the juvenile stage, it will be possible to use them in the production of reproductive material.

From those 165 trees more than 163 were successfully Cloned.

Until we have the necessary results at the molecular-genetic level, or at the level of provenance testing, we will have to be satisfied with using the material only for local needs, without mixing it with other materials. Thus, the clones from Sarajevo will be used in the area of Sarajevo, and the clones from Banja Luka only in the Banja Luka region. We might eventually perform cautious mixing in the river basins, but with the greatest vigilance, and only in zones which are intermediate between the archived populations. We cannot even consider the possibility of random mixing until we obtain the molecular genetic results.
The material from the of Rudnik population has a special position as it represents the pioneer population on the Vrtilište mine waste deposits near Kakanj. This material should be used in the treatment of the mine waste deposit site in Kakanj, as it quickly stabilizes the soil and creates conditions suitable for the growth of native vegetation.

Situation in the field is such that one third of selected trees is destroyed or they died

Main threat to genepool of autochthonous poplars and willow is non-planned land use along rivers, regulation of river flows, sand mines, dumps and lack of Law regulation.

Systematic of poplars in Bosnia and Herzegovina

We have great diversity in forms within each of two genes (poplar & willow) and introduction of cultivates in Bosnia-Herzegovina

REVIEW OF TAXONOMY UNITS IN B&H (according Janjić):

POPLARS

Gen. *Populus* L.
Subgen. *Balsamifera* Bugala
(syn. Subgen. *Eupopulus* Dode)
Sect. 1. *Aigeiros* Duby
P. nigra L. – black poplar
- subsp. *nigra* – typical black poplar
(syn. *P. nigra* L. apud. Jov. et. Tuc. 1972)
- var. *nigra*
- f. *nigra*
- f. *vistulensis* (Dode) Janjić, stat. nov.
(syn. *P. vistulensis* Dode)
- f. *truncata* Jov. et Tuc.
- f. *maserica* (Jov. et Tuc.) Janjić stat. nov.
(syn. *P. nigra* var. *maserica* Jov. et Tuc.)
-subsp. *caudina* (Ten.) Bugala – hairy black poplar
(syn. *P. caudina* Ten.; *P. nigra* var. *pubescens* Parl.)
- var. *grandifolia* (Džekov) Janjić
(syn. *P. nigra* var. *pubescens* f. *grandifolia* Džekov)
- f. *grandifolia*
- f. *pseudocaudina* Janjić
- f. *torulosa* Janjić
(syn. *P. pubescens* var. *maserica* Jov. et Tuc.)
- f. *hispidula* (Bornm.) Janjić
(syn. *P. nigra* f. *hispidula* Bornm.; *P. nigra* var *calvescens* Džekov)
- var. *narentana* (Jov. et Tuc.) Janjić – hairy black poplar
- f. *Narentana* - hairy black poplar

P. nigra subsp. *nigra* x *P.* cv. 'Italica'
(syn. ? *P. pannonica* Kit.; *P. nigra* var *media* Schur)
P. x *neapolitana* Ten. nm. *kakanjensis* Janjić – Kakanj poplar
(= *P. afghanica* cv. Afghanica x *P. nigra* subsp. *caudina*)
P. afghanica cv. Afghanica x *P. nigra* subsp. *nigra*
(syn. *P.* x *pannonica* Kit. nm. *ilidshensis* Janjić; = *P.* x *charkowiensis* Schroed. vel affine)

Gen. *Populus* **L.**
Subgen. *Populus*
(syn. Sect. *Leuce* **Duby)**
Sect. 1. *Populus*
(syn. Sect. *Albidae* **Dode)**
P. alba **L. – white poplar**
- f. *macrophylla* **(Bugala) Janjić**

(syn. *P. alba* **var.** *macrophylla* **Bugala)**
- f. *chenopodiifolia* **Gombocz**
- f. *insignis* **Gombocz**
- f. *qercifolia* **Janjić**
- f. *stenophylla* **Janjić**
- f. *brevifolia* **Janjić**
- f. *ovatifolia* **Janjić**
- f. *australis* **Janjić**

WILLOWS

Salix alba L.
var. *vitelina*
f. *pendulina*
Salix caprea
Salix cinerea
Salix elaeagnos
Salix fragilis
Salix glabra
Salix pentandra
Salix purpurea
Salix retusa
Salix viminalis

Further works in gene fond conservation

Researches on intra and interpopulation morphological variability (morphology of flower and leaf)

Researches on intra and interpopulation molecular variability (izo-enzymes and DNA)

in situ **conservation**

ex situ **conservation with founding second of National poplar's archive**

Establishment clonal experiments trials

Law regulations!

Contribution of Poplars & Willows to Sustainable Livelihoods & Land-use in Croatia: Status & Needs

Presented by:
Davorin Kajba

GCP/INT/059/ITA
International workshop:
"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian Countries"
Izmit, Turkey 27 – 31 July 2009

Croatia

- **0,51 ha forest per inhabitant**
- **2,5 mil. ha of forest land**
  (2 mil. ha high stocked forest, 84 %)
  (400 000 ha unstocked, 16 %)
- **State forest 80 %, private 18,6%**
- **beech (35%) oak (27%), hornbeam (8 %) ash (3 %);**
  fir and spruce (13 %), pine (2 %)
- **naturally regenerated by silvicultural management (95 %)**

Context: Area & type of poplar & willow culture

- Area of poplar natural forests (ha): 9 000
- Area of willow forests (ha): 10 000
- Mixed (poplar & willows): 14 000

In total natural stands: 33 000 ha

- Area of intensive plantations, poplar (ha): 12 000
- Area of intensive plantations, willow (ha): 3 000
- Mixed poplar & willow cultures (ha): 2 000

In total plantation & cultures: 17 000 ha

- Area of agroforestry, poplar/willow (ha): -

Rotation period for poplar plantation (15-25 yrs, 6,5 x 5,6 m) and for poplar cultures (25-30 yrs, 6 x 6 m, 5 x 4 m)

Rotation period for willow plantation and cultures are 30-60 yrs

Key stakeholders in poplar & willow development

- Governance in P & W (policies, programs & technical support):

  Ministry of Regional Development, Forestry and Water Management
- Research in P & W & Specializations
- Education & Training in P & W

  Faculty of Forestry University of Zagreb

  (Forestry Institute)
  - Technical training for forest managers
  - Operational training for forest artisans

  Forestry Extension Service (focused on private forests)
- Investors in P & W afforestation/harvesting/end use

1. Government

   Hrvatske šume Co. (Croatian forests Ltd.)

Benefits from poplar & willow cultivation (economic, environmental & social)

- production from the poplar/willow/biomass production has not been used in a larger scale so far
- additional benefits could be numerous socio-economic positive aspects of poplar/willow/SRC plantations and biomass use (employment, additional income, increase of economic activity, rural diversification and others).
- Increased Standard of Living
- Environment
- Health
- Education
- Social Cohesion and Stability
- Migration Effects (Mitigating Rural Depopulation)
- Regional development
- Rural diversification

Issues in poplar & willow culture

- State forests (80 %)
- Poplars and willows (66 % state owned)

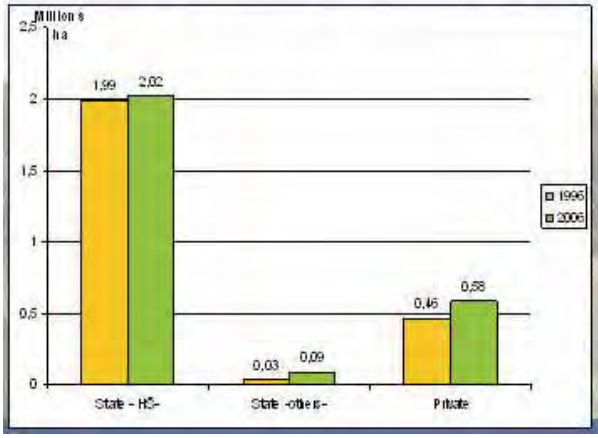
  along the river stream Drava, Danube, Sava, Mura river

  Annually reforestation

  350 to 400 ha of poplar plantation/cultures

  20 ha of willow plantation/cultures

  Area trends stable → negative



Problems/constraints experienced in P & W culture

Main clones in use:

'M 1', 'Pannonia', 'S 1-8 ', 'S 6-20', 'S 6-36', '710 ', 'I-214', 'Bl Constanzo',

- 3 (2) clones include the 95 % of total reproduction
- Clonal maturity, most of the clones selected before 30 yrs;
- Some new presence of pests and disease (*Phytophtora*, thrips i dr.);
- Needfulness for clones tolerant on the drought conditions (underground water level etc.);
- Climatic changes,
- New clonal selection, SR Forestry, biorefinery ....

Problems/constraints experienced in P & W culture

- Severe changes of water regime in the basin of Drava river – outlet to Danube river, Sava river
- Non-appearance of natural flooding
- Significant low groundwater table
- Growth depression
- 15 000 ha of p & w still under mines

Opportunities for poplars & willows to meet sustainable livelihoods & sustainable land-use

- **Cultivation of poplars**

On good sites

20 yrs. → 350 m^3/ha (netto)

80 % of logs (for peeling and sawing)

20 % of thinner roundwood and pulpwood

- **SRC Arborescent willows**
  (*Salix alba* and hybrids)

- specific adaptation of clones for low productive lowland sites
- genetic differentiation in DM production (10-22 t/ha/yrs)
- large collection of willow clones
- Spacing 1,3 x 0,8 m = 9615 plants/ha

Priority needs to support poplar & willow development

- Poplars
- Testing of new poplar clone selection (adaptation, GEI, FRM, exchange, registered,..)
- Willow (potential for SRC – biomass production)
- Forest area suitable for poplar/willows/SRC – app. 180,000 ha (uncovered forest land) of which approximately about 50,000 ha are suitable for SRC
- Agricultural areas with moderately suitable soils and limited soil suitability are around 900,000 ha.

Thank you for your attention!

Egypt

Contribution of Poplars & Willows to Sustainable Livelihoods & Land-use in Egypt: Status & Needs

Presented by:

(T. A. Omran)

GCP/INT/059/ITA

International workshop:

"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian Countries"

Izmit, Turkey 27 – 31 July 2009

Country general information

- Climate: Arid
- Total country area : 1 002 000 km2.
- Area of agricultural land (%): 3 %
- Forest area and potential growing stock (FRA 2010):
- Forest area : 70 000 ha (0.07%, mainly linear plantations for environmental protection)
- potential growing stock : 8 .4 M m3
- Population: (72.6 M – 2006 census)

Area & type of poplar & willow culture

- Area of poplar Plantations (ha): 700 ha
- Area of willow forests (ha): 1000 ha
  (Linear plantations, no wood lots)
- Area of intensive plantations, poplar (ha): Nil
- Area of intensive plantations, willow (ha): Nil
- Area of agroforestry, poplar (ha): Nil
- Area of agroforestry willow (ha): Nil

Key stakeholders in poplar & willow development

- **Governance in P & W (policies, programs & technical support):**
- Ministry of irrigation and Water Resources, planting willows along main irrigation canals
- Ministry of agriculture, introducing new poplar hybrids and clones
- **Research in P & W & Specializations**
- University of Alexandria, Department of Forestry: Growth and physiology of some species, comparative growth of some species and clones introduced from Syria.
- Ministry of Agriculture, Agricultural Research Institute, Growth of some introduced species and clones introduced from Turkey.
- **Education & Training in P & W**
  1. Universities: University of Alexandria, Faculty of Agriculture, Department of Forestry : offers B. Sc, M. Sc and PhD degrees in forestry
  2. Technical training for forest managers: Alexandria university and Ministry of Agriculture and Land reclamation
  3. Operational training for forest artisans: Alexandria university and Ministry of Agriculture and Land reclamation
  4. Others: Kaul- Mubarak secondary technical forestry school at Luxur city
- **Investors in P & W afforestation/harvesting/end use**
- No investors on commercial scale
- Private sector (Farmers and land owners): Poplar and willows planted around fields and along secondary irrigation canals.

Benefits from poplar & willow cultivation (economic, environmental & social)

- Increasing the amount of local wood and decreasing, partially, the amount of hard currency needed for wood imports

- Using waste water safely through establishing poplar plantations near the sewage stations where land is available.

- Conservation of water streams banks.

Issues in poplar & willow culture

- The limited number of introduced clones and species.
- Infection with the stem borer *Zeuzera pyrina* (Leopard moth).
- Susceptiblity to infection with: (in trees already infected by stem borer)
- 1-Heart rot (Stem rot) disease caused by *Inonotus sp, Ganodarma applanatum*
- 2: Root rot fungi disease caused by *Armillariella mellea*

Problems/constraints experienced in P & W culture

- Due to the limited forest resources in Egypt in genral and the small area of polars and willows, no problems or constraints were experienced in their culture except the infection with stem borers and diseases in the governorates of high relative humidity (Alexandria and Behaira governorates)

Opportunities for poplars & willows to meet sustainable livelihoods & sustainable land-use

- Forest plantations have very limited role in sustainability of livelihood due to:

1. the limited amount of local wood removals and the underestimated prices of local wood in comparison to the prices of imported wood.
2. There is no community plantation in Egypt. Private willow plantations consist of small number of trees for small canal conservation and shading.

- However, there is an opportunity for poplars to have a role in sustainable land-use through Phytoremediation of contaminated sites and harmful waste products, particularly in industrial and near by waste water plants..

Priority needs to support poplar & willow development

- Securing adequate external funding for establishing poplar and willow plantations using sewage water, through bilateral and multilateral sources and joint projects with international donors.. (Governmental funding to the forest sector is limited. It represents less than 2.5% of the Ministry of Agriculture and land Reclamation budget).

- Technical contribution from regional and international organizations (technology transfer), including introduction of new clones and species and testing their performance under the local conditions for future development and expansion in planting poplars and willows


Thank you

Contribution of Poplars & Willows to Sustainable Livelihoods & Land-use in Estonia: Status & Needs

Presented by:
Katrin Heinsoo *PhD*
Estonian University of Life Sciences

GCP/INT/059/ITA
International workshop:
"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian Countries"
Izmit, Turkey 27 – 31 July 2009

Context: Area & type of poplar & willow culture

- **Area of poplar natural forests (ha):0**
- **Area of willow forests (ha):?**
- **Area of intensive plantations, poplar (ha) 0 (*Populus x wettsteinii* 600 ha):**
- **Area of intensive plantations, willow (ha) ca ca 60 ha:**
- **Area of agroforestry, poplar (ha) 0:**
- **Area of agroforestry willow (ha) 0:**

Key stakeholders in poplar & willow development

- **Governance in P & W (policies, programs & technical support):**
  1. **No specific supports, only general remarks in Energy Program and Biomass Program**
- **Research in P & W & Specializations**
  1. **EULS - Estonian University of Life Sciences, (yield, diseases, phytoremedation, VOC (volative organical compounds) emission from SRC (Short Rotation Coppice))**
- **Education & Training in P & W**
  1. **EULS (specific postgraduate studies, topics during general courses)**
  2. **Technical training: EULS for foresters, Estonian Farmers Association for farmers**
  3. **- 4. No one**
- **Investors in P & W afforestation/harvesting/end use**
  1. **Farmers/smallholders**
  2. **Companies? Interested in the market , but in this fluctuating situation do not want to take the risk of investments**

Benefits from poplar & willow cultivation (economic, environmental & social)

- **Biomass for energy purposes**
  growing market due to changes in energy policy (several CGPs planned to use wood-chips together with peat)
- **Local product to local people**
  decreases the demand for import + transport
- **Environmental benefits**
  utilisation of pre-treated sewage sludge or wastewater increases both the yield and pureness of environment (also indirectly through the decreased demand for mineral fertilisers)
- **Additional activity to the rural areas**
  larger-scale usage both for abandoned land and local farmers

Issues in poplar & willow culture

The main direct outcomes foreseen for poplar & willow culture are:

- Biomass for energy purposes (most typical heat, but also electricity)
- Biomass for pulp industry (hybrid aspens only)
- Phytoremedation targets
- Handicraft raw material
- Agroforestry
- Living barriers against dust, heavy metals or unpleasant view

Problems/constraints experienced in P & W culture

- **Lack of original location specific planting material**
- **Absent of supporting infrastructure (nobody organises feasible planting or harvesting)**
- **Inconsequent of bioenergy supporting systems**
- **Market fluctuations do not support long-term investments**

Opportunities for poplars & willows to meet sustainable livelihoods & sustainable land-use

- Local renewable energy supply
- Small scale nutrient cycle if to use wastewater or sewage sludge for fertilisation
- Less intensive crop management compared with annual crops increases local biodiversity
- Reasonable option for abandoned farmland in rural areas

Priority needs to support poplar & willow development

- Clear statements about the long-term bioenergy targets, involving also the sustainability evaluation criteria
- Development of organisation that includes representatives of all possible stakeholders (e.g. end-users, officers, scientists, farmers, foresters, entrepreneurs) interested in bioenergy promotion
- Economically independent clone selection and breeding program for new planting material on regional level
- Establishment of SRC infrastructure through investments with the restriction towards monopoly behaviour

Contribution of Poplars & Willows to Sustainable Livelihoods & Land-use in Georgia: Status & Needs

Presented by:
Natia Iordanishvili

GCP/INT/059/ITA

International workshop:

"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian Countries"

Izmit, Turkey 27 – 31 July 2009

Structure of Forestry Department

- **Administrative Service**
- **Forest Management Service**
- **Economic Service**
- **Monitoring Service**
- **Regional Forest Districts (9)**

Territorial Bodies
Forest Regional Forest Divisions

1. **Kakheti RFD**
2. **Kvemo Kartli RFD**
3. **Shida Kartli RFD**
4. **Mtcketa-Mtianeti RFD**
5. **Imereti RFD**
6. **Samtkhe Javakheti RFD**
7. **Guria RFD**
8. **Racha-Lechkhu RFD**
9. **Samegrelo-Zemo Svaneti RFD**

Goal and objectives of Forestry Department

- Participation in the development and implementation of State Policy in forest protection, forest use and forest rehabilitation spheres;
- Protection forest from fires and illegal cutting, forest pest and diseases, land and water protection activities;
- Planning activities with regard to conservation and improvement condition of forest, having climate regulation, sanitary-hygienic, recreational and other functions;
- Participation in the development of legislative, normative-methodological and economical basis for the development of forest sector;
- Assurance of execution of forest inventory;

Goal and objectives of Forestry Department

- Development of yearmarked programs for forest system; Monitoring of execution of State Programs and other activities on the territories of State Forest Fund;
- International cooperation for the development of forest sector;
- Development of recommendations and proposals with regard to assurance of public participation in management of the State Forest Fund and assistance for their implementation;
- For the assurance of successful implementation of Sustainable Development of State Forest Fund, cooperation with international and local research institutions as well as non-governmental organizations

The Main Problems

- Abolishment of economical activities from field of competence of Forestry Department;
- Outdated documentation of forest inventory;
- Lack of systems for sustainable use of forest and for the consistent state policy;
- Forest protection activities are carried out into small scale;
- Imperfection of legislative basis.

Forest Fund of Georgia

- Total area of forest fund – 2 million 988 thousands ha
- Forest area – 2 miln. 767,3 thousands ha (40% of country territory)
  - Mountainous forest – 98 %
  - Lowland forest– 2%

- Volume annual increment – 4,6-4,8 million m3
- Annual growth on 1 ha – 1,8 million m3

Forest distribution by Administrative Categories

- Forestry Department of Ministry of Environment Protection and Natural Resources of Georgia– 83,8%;
- Ministry of Agriculture – 8,1 %;
- Agency of Protected Areas – Ministry of Environment Protection and Natural Resources of Georgia – 8,1%

Distribution of forest according to species

Softwood	15,8% - 365 297 ha
Hardwood	72,9% - 1687297 ha
Soft leafy wood	8,5% - 199 892 ha
Other hardwood species	0,1% - 3 335 ha
Other wood species	0,5% - 11 396 ha

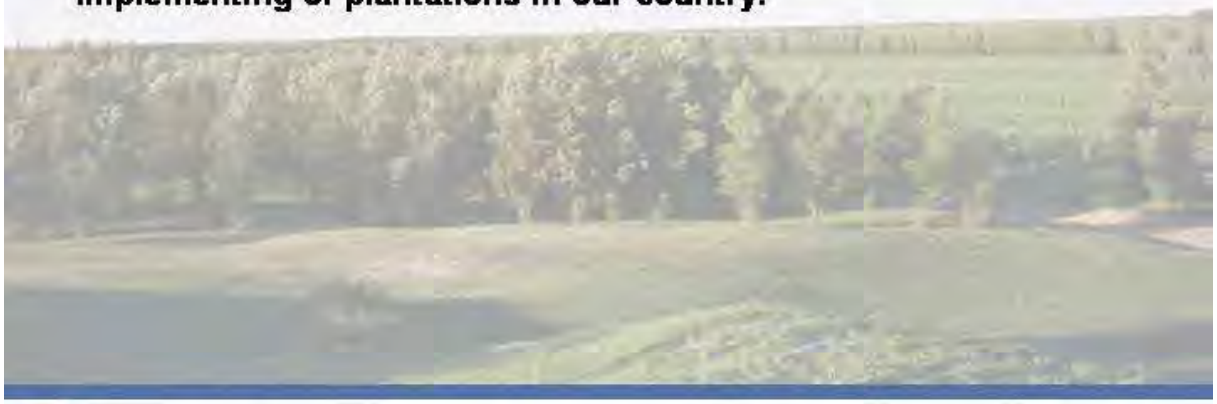
- In Georgia naturally grow only seven species of Populus (Including Populus Alba, P. Del. Todies, P.Temula) etc and 20 species of Salix (Including Salix Alba, Salix Babilonica).
- All species of Populus cover only 11 619 ha of the State Forest Fund.
- Species of Salix cover only 841 ha, which is only 0.4% of forest area, standing volume – 45.3 thousand cubic meter, total volume constitute 0.3% of total standing volume.
- Populus Deltoides cover 1.0 percent of forested area – 1988 ha, standing volume – 204.5 thousand cubic meter, 1.4% of total of total standing volume.

Priority needs to support poplar & willow development

- returning functions of economical activities to the Forestry Department (which is already foreseen into the forest sector long-term development plan)

According to `Afforestation rules of forest in Georgia` it is recommended cultivation of Salix and Populus species for the logging of timber resources.

according to the favorable natural-climate conditions for the cultivation condition for the both species as well as availability of cultivation methodology and schemes, it will be reasonable implementing of plantations in our country.



Key stakeholders in poplar & willow development

- **Governance in P & W (policies, programs & technical support):**
  1. Ministry of Environment Protection and Natural Resources of Georgia;
  2. Forestry Department
- **Research in P & W & Specializations**
  1. Georgian state Agrarian University
  2. Georgian V. Gulisashvili Forestry Institute
- **Education & Training in P & W**
  1. Universities/Tertiary education for professionals/planners
  2. Technical training for forest managers
  3. Operational training for forest artisans
  4. Others
- **Investors in P & W afforestation/harvesting/end use**
  1. Government
  2. Farmers/smallholders
  3. Companies
  4. Others


Thank you for your attention

Kazakhstan

Contribution of Poplars & Willows to Sustainable Livelihoods & Land-use in Republic of Kazakhstan: Status & Needs

Presented by:
(Utegenov B.)

GCP/INT/059/ITA
International workshop:
"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian Countries"
Izmit, Turkey 27 – 31 July 2009

Context: Area & type of poplar & willow culture

- **Area of poplar natural forests (ha): 22**
- **Area of willow forests (ha):1,15 Wood strips and wood cultures**
- **Area of intensive plantations, poplar (ha):**
- **Area of intensive plantations, willow (ha):**
- **Area of agroforestry, poplar (ha):**
- **Area of agroforestry willow (ha):**

Key stakeholders in poplar & willow development

- **Governance in P & W (policies, programs & technical support):**
  The Republic of Kazakhstan Ministry of Agriculture. The program «Жасыл Ел"
- **Education & Training in P & W**
  The Kazakh National Agrarian University
- **Investors in P & W afforestation/harvesting/end use**
  Government of Republic of Kazakhstan

Benefits from poplar & willow cultivation (economic, environmental & social)

- **Kazakhstan has developed new project of "Forest policy", which contains national forest policy issues. It contains main priority issues, including forest plantation and its economical, environmental and social aspects. It also contains issues on forest cultivation of fast-growing species (poplar, aspen) to satisfy the needs of wood-processing industry, applying technologies capable of processing refuse woods.**

Issues in poplar & willow culture

- There are following poplar and willow pests in Kazakhstan: aspen borer, sawyer, big aspen borer, willow beetle/borer, poplar leaf-cutting beetle, willow silkmoth.
- There are following poplar diseases: leaf powdery mildew, blotch, grey leaf blotch, deformation of leaves, leaf rust, bacterial cancer of branches, branch desiccation, root rot.

but,

Presently, the developed national forest policy of Republic Kazakhstan provides the creation of uniform republican services "stations of monitoring and protection of wood against pests and illnesses".

Problems/constraints experienced in P & W culture

- Since the beginning of the 1960s considerable work on studying poplars has been carried out in Kazakhstan as well as selection methods of hybridization and selection of perspective types of hybrids for economic purposes. Works were conducted by the Kazakh agricultural institute, the Kazakh forestry scientific research institute, Almaty forest selection centre.
- As a result of works, some of the perspective hybrids tested in various regions of Kazakhstan were selected. However, they have not been officially approved as sorts. Schemes of poplar cultivation were developed for some environment-climatic conditions. There is an experience of poplar cultivation with application of sewage water. Recommendations about various works with poplars have been developed.
- Active application of hybrids were identified in green zones around Astana "Jasil aymak", in some plantations in southern regions, for landscape gardening of communities and roads.

Opportunities for poplars & willows to meet sustainable livelihoods & sustainable land-use

- In Kazakhstan there is a huge growing need for wood and poplar wood. The basic consumers are such sectors as construction industry, furniture manufacturers and agriculture.
- There is a state support, in the form of funds, for some scientific activities on poplars: selection and varietal plant breeding, agrotechnology of poplar cultivation in plantations. However, plantation of poplars is underdeveloped and is restricted to private plantations of small size (up to 1ha), created from unchecked poplars grown by primitive methods. Presently, legislative stimulation is being developed for artificial cultivation of forests and plantation of wood species (including poplars), but, there is no such system now. Propaganda on this matter is being carried out.

Priority needs to support poplar & willow development

- Carry out nature protection function, gardening .
- Poplars are used in agricultural sector as a construction material.
- In future, they will be used as a raw materials for a wood-manufacturing, the cellulose industry, etc.

Contribution of Poplars & Willows to Sustainable Livelihoods & Land-use in (Kyrgyzstan): Status & Needs

Presented by:
Venera Surappaeva

GCP/INT/059/ITA
International workshop:
"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian Countries"
Izmit, Turkey 27 – 31 July 2009

Context: Area & type of poplar & willow culture

This slide contains data about poplar and willow plantations, belonging to state property, but data about municipal and private ownership is absent.

№	Name of the tree	Area (ha)
	Poplar	**7,854**
	Willow (tree formations)	**2,102**
	Willow (bush formations)	**24,527**

Context: Area & type of poplar & willow culture

In Kyrgyzstan, there are about 25 species of natural willows and 16 species of poplars, out of which 9 are natural poplars.

Poplars and willows can be found in the whole area of the Republic, from the valleys to high mountain areas, along the rivers and on water-logged grounds with separate samples, groups of bushes, in flood-plain bushes, in forest clusters in riparian woodlands.

Poplars and willows are used as protection forests and as plantations, and they have been cultivated for a long time in the country. They are usually planted around private houses, along roads, ditches and channels. Poplars are widely used for landscaping population areas.

Context: Area & type of poplar & willow culture

Forest policy in Kyrgyzstan is directed to growing industrial plantations of poplars and willows on municipal and private lands, and it also defines the stakeholders and their role in developing this policy, which are primarily local people, community, ministries and agencies.

A GEF/World Bank Project on the creation of industrial plantations from fast-growing types of poplars is being carried out, with a view to introduce a Clean Development Mechanism.

Context: Area & type of poplar & willow culture

The Forestry Institute of the Kyrgyz Academy of Sciences, is conducting sort testing of hybrid poplars. For this, poplars and willows of natural origin are being used, also originating from other countries which have passed the test. They are bred from cuttings, root stalks and seeds. Local population mainly propagates poplars with cuttings of species growing in local area.

For sort testing hybrid forms, species from other countries are used, in particular from Kazakhstan, Uzbekistan and Russia. But the practice showed that hybrid forms from Russia are not offering perspectives as they are less stable during summer droughts.

Main types of diseases of poplars and willows are Aphrophora salicina Goeze, Leucoma salicis L., Phalera bucephala, Chionaspis salicis L., Pulvinaria salicicola Borchs, Chrisomela populi L.

Context: Area & type of poplar & willow culture

Present plantations do not produce the volume of wood that would satisfy the needs of the population. For this reason, we need technical support and capacity building on the development of industrial plantations of willows and poplars.

Kyrgyzstan is interested in becoming an IPC member.

Contribution of Poplars & Willows to Sustainable Livelihoods & Land-use in Romania:Status & Needs

Presented by:
Mihai Filat / Bogdan Popa

GCP/INT/059/ITA
International workshop:
"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in selected Mediterranean and Central Asian Countries"
Izmit, Turkey 27 – 31 July 2009

Context: Area & type of poplar & willow culture

- **Area of poplar natural forests (ha): 24, 317**
- **Area of willow forests (ha): 15,249**
- **Area of intensive plantations, poplar (ha): 55,251**
- **Area of intensive plantations, willow (ha): 20,371**
- **Area of agroforestry, poplar (ha): 703**
- **Area of agroforestry willow (ha): 45**
- **Area of mixted poplar / willow natural forests (ha): 8,073**
- **Area of mixted poplar& willow plantations (ha): 1823**

Key stakeholders in poplar & willow development

- **Governance in P & W (policies, programs & technical support):**
  1. Ministry of Agriculture, Forests and Rural Development / Derpartament of Forests – policy, regulation, regulations enforcement
  2. National Forest Administration (NFA) - policy, management for poplar and willow surfaces belonging to the state
- **Research in P & W & Specializations**
  1. National Institute for Forest Research and Management Planning (NIFRP) – poplar and willow section in Tulcea
- **Education & Training in P & W**
  1. Forestry Universities in Brasov, Suceava
  2. Training organized by NFA and NIFRP
- **Investors in P & W afforestation/harvesting/end use**
  1. Government through NFA
  2. Harvesting, end use and afforestation companies
  3. Agroforestry companies

Benefits from poplar & willow cultivation (economic, environmental & social)

- **Economic:**
  - Low risk investments for NFA and other investors for un agricultural lands
  - Consistent IRR for NFA for the plantations
- **Environmental**
  - Use of un agricultural land along the rivers (between the bank and the dams)
  - Carbon sequestration
  - Ecological reconstruction
- **Social**
  - Heating wood and rural contructions wood for the communities allong the main rivers

Issues in poplar & willow culture

- Decrease of the total poplar and willow area in the last 15 years
- Dryings of poplars and willows
- Changes in the site conditions on the interior rivers valleys
- Changes due to the hydro - technical works
- Low level of state or private investments in poplar

Problems/constraints experienced in P & W culture

- Low level of awareness about the benefits of poplar and willows
- Low number of researchers
- Funds allocated to purchasing equipment are insufficient
- Lack of a coherent continuous training programs of the researchers
- Lack of coherent programs (on long term especially)
- Resistance in implementing innovative techniques

Tajikistan

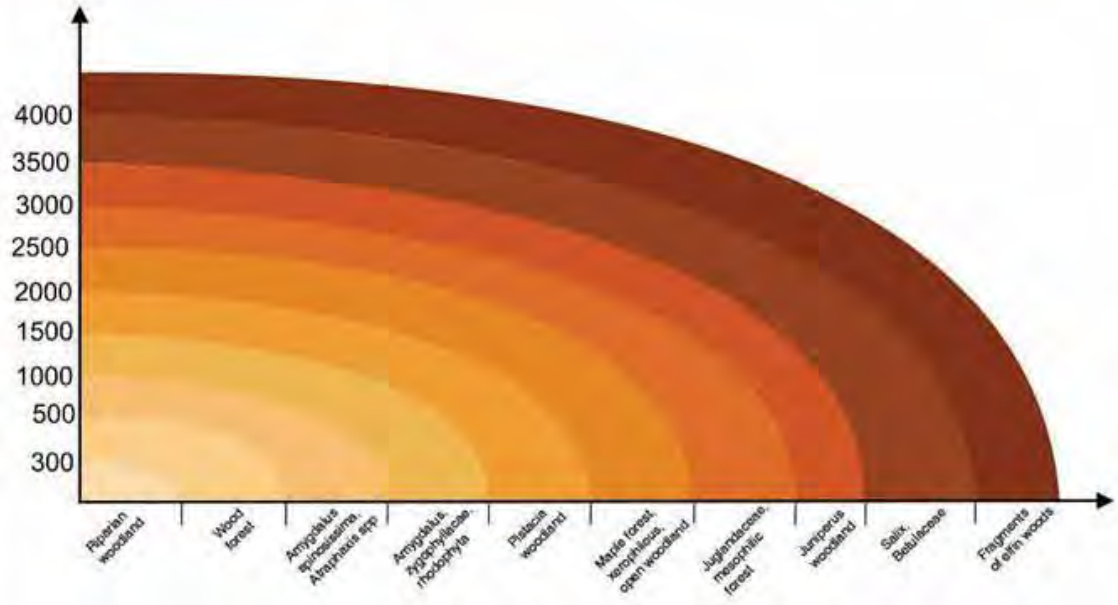
IMPORTANCE OF POPLARS AND WILLOWS PERSPECTIVES AND DEVELOPMENT

Kasirov Kakul Khasanovich
Environmental Protection Committee, Government of Tajikistan, Head of Main Department on Environmental Impact;
Yatimov Giyosiddin
Chief Expert, Afforestation Department, State Institution for Forestry and Hunting

The importance of Poplar plantations for the improvement of the social well being of the population:

1. Increase of the natural vegetation and forest plantations areas;
2. Provision of alternative sustainable livelihoods;
3. Creation of a base for the development of wood plantations.

Forest classification according to ecofloristic zones starting from sea level



Area of Poplar and Willow Growth

- Central Tajikistan: Gissar, Darvaz and Karategin regions;
- Northern Tajikistan: Turkistan, Zeravshan and Kuramin regions;
- Pamirs area: Vanch, Ishkashim and Shugnan regions.

AREA

Natural Forests

Poplars – 27,500 ha

Willows- 1,750 ra

POPLARS

Nine natural species grow in Tajikistan

Asiatic Populus subgenus:

1. P. pruinosa Schrenk
2. P. euphratica Oliv

Populus subgenus:

3. P. alba L.
4. P. tadshikistanica
5. P. cataracti Kom

6. P. usbekistanica Kom
7. P. talassica Kom
8. P. pamiricia Kom
9. P. densa Kom

WILLOWS

The following willow species grow in Tajikistan:

1.Ива плотносерёжчая;
2.Ива Вильгельмса;
3.Ива капью;
4.Ива туранская;
5.Ива илийская;
6.Ива линейнолистная;

Continued

7. Ива Карелина;
8. Ива иглолистная;
9. Ива Федченко;
10. Ива Шугнанская;
11. Ива сизоватая;
12. Ива Недзвецкого;
13. джунгарская.

Poplar and Willow plantations

- Area of poplar plantations (1989) -6,000 ha;
- During independence years – 23 small nurseries, S = 65 ha;
- More than 65 million cuttings were planted;
- Big industrial enterprises: TadAz and TajikCement, farmers;
- Potential for development – more than 30%.

Needs for Poplar Wood

- Aluminium plant on poles – more than on million units every year;
- Construction materials – more than 200 thousand m^3 (cubic meters) every year;
- Industrial needs – more than 10,000 m^3 (cubic meters) every year.

Poplar Pests and Diseases

- Poplar beetles;
- Pear-shaped gallic greenfly;
- Poplar scale;
- Poplar borer;
- Poplar root girdler;
- Goat moth;
- Poplar leaf beetle;

Continued

- Poplar scab;
- Leaf blight;
- Powdery mildew;
- Rust.

Cultivation of Poplars and Willows

Poplar plantations started in 1973 in the territory of the State Forest Fund and were carried out by the workers of the Central Asian Research Institute of Forestry, under the direction of Dr U. Holdorov and Padalko V.V..

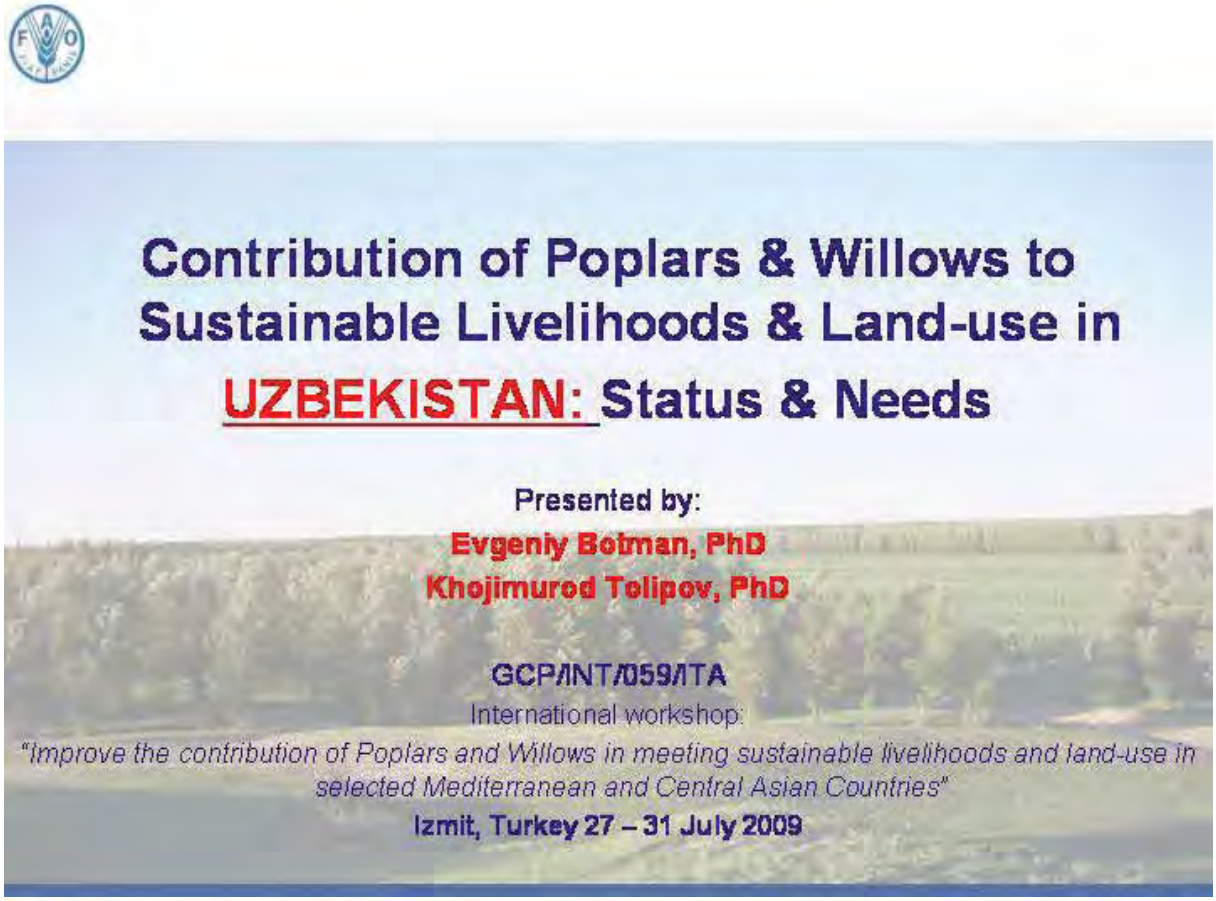
PARTNERS

- Ministry of Agriculture;
- Ministry of Energy and Industry;
- Poplar Growers ;
- Association of Water Users;
- Ministry of Water Resources and Irrigation;
- Agency for Land Utilization under the Government of Tajikistan;
- Institute of Botany, Academy of Sciences, Republic of Tajikistan.

REQUESTS

- Becoming an IPC member ;
- Creation of poplar plantations in the watersheds of Central Tajikistan within FAO Projects framework;
- Implementation of a State Programme for the development of the forestry sector, in particular creation of Poplar plantations in an area of 3,000 ha.

THANK YOU FOR YOUR ATTENTION


Contribution of Poplars & Willows to Sustainable Livelihoods & Land-use in
UZBEKISTAN: Status & Needs
Presented by:
Evgeniy Botman, PhD
Khojimurod Tolipov, PhD
GCP/INT/059/ITA
International workshop:
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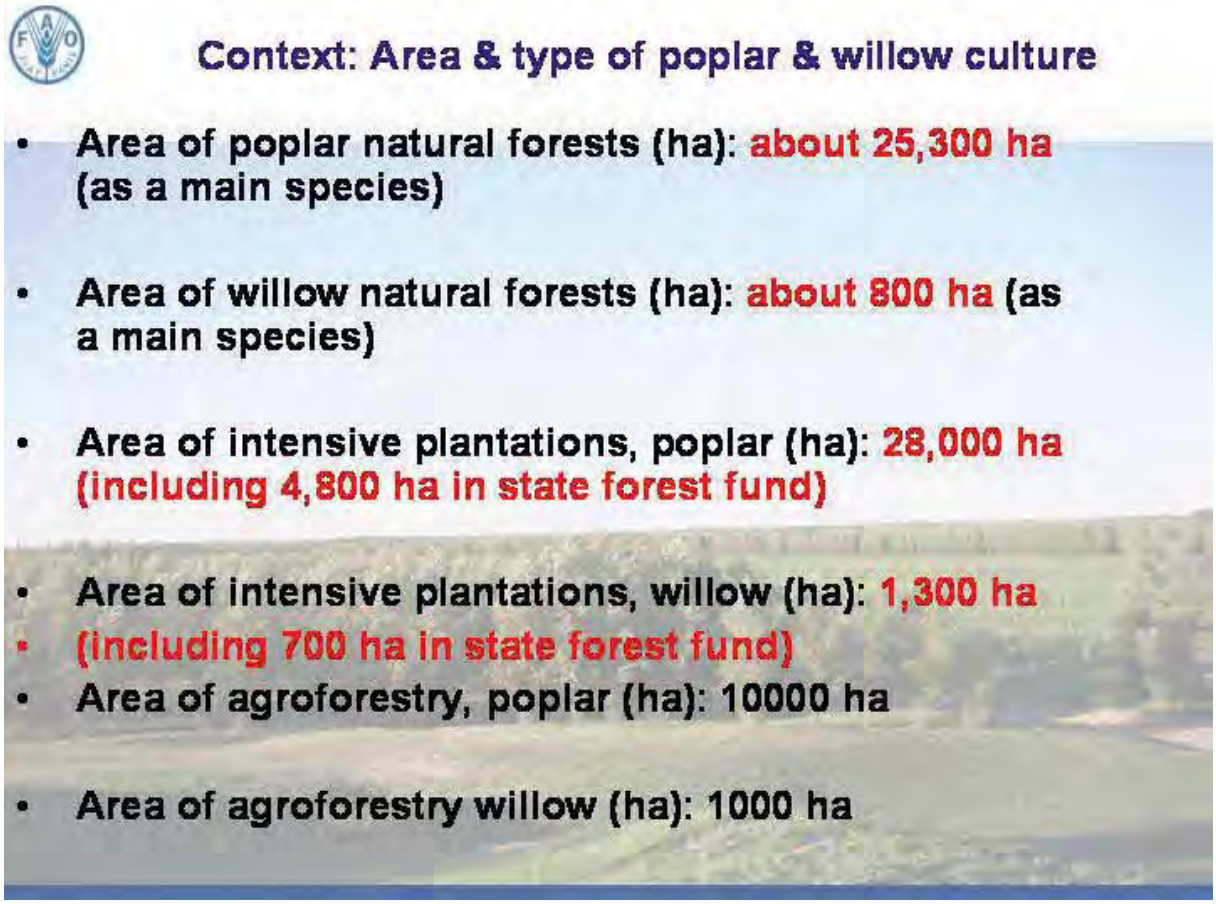

Context: Area & type of poplar & willow culture
• Area of poplar natural forests (ha): about 25,300 ha (as a main species)
• Area of willow natural forests (ha): about 800 ha (as a main species)
• Area of intensive plantations, poplar (ha): 28,000 ha (including 4,800 ha in state forest fund)
• Area of intensive plantations, willow (ha): 1,300 ha
• (including 700 ha in state forest fund)
• Area of agroforestry, poplar (ha): 10000 ha
• Area of agroforestry willow (ha): 1000 ha

Key stakeholders in poplar & willow development

- Governance in P & W (policies, programs & technical support):
  1. List Ministries/Departments & responsibilities

  Main Forestry Department of Ministry of agriculture and water resources

  The Regulation #62 (February, 8, 1994) of the Cabinet of Ministries "About measures on developments of industrial plantations creation of poplar and other fast-growing tree species

  Creation of 100 000 ha of industrial plantations during 10 years
- Research in P & W & Specializations
  1. List institutes & main fields of activity....

  Same Regulation stipulated strengthening of scientific researches on perfection of industrial plantation cultivation , selection of new perspective cultivar and forms of poplars and others fast-growing local and introduced tree species.

  Republican Scientific-Production Centre for decorative gardening and forestry (former Forestry research institute)

  Development creation technologies of hybrid poplars industrial plantations for constructional and technical needs using local and introduced hybrids in different soil-climatic conditions
- Education & Training in P & W – no special courses in P&W
  1. Universities/Tertiary education for professionals/planners
  2. Technical training for forest managers
  3. Operational training for forest artisans
  4. Others
- Investors in P & W afforestation/harvesting/end use
  - Government
  - Farmers/smallholders
  1. Companies
  2. Others

Benefits from poplar & willow cultivation (economic, environmental & social)

- **Economic benefit:**
- For construction, as espaliers for vineyards, studdings, for manufacturing handles for entrenching tools, as firewood, etc.
- The wood raw material for manufacturing woodchip boards and other similar products
- **Environmental benefit:**
- As shelter belts: soil protection, improve a microclimate, a biological drainage,
- sanitary-and-hygienic role, aesthetic and recreational roles
- Along with canal: bank's fastening, reduces evaporation from a water surface
- CO_2 Sequestration
- **Social benefit:**
- Reduce expenses of local people on wood for construction and firewood
- Additional income for farmer from timber
- Development of small workmanship
- Development industry in countryside (potentially)

Issues in poplar & willow culture

Access to researches and publications on P&W

Advanced pattern of national P&W network and services

Collaboration with advanced research centre on P&W culture (including establishment of fast growing short rotation coppies plantations, productivity modeling)

Exchange of P&W planting material

Acquainting with reproduction system of P&W

Acquainting with Education & Training in P&W

Problems/constraints experienced in P & W culture

Main requirements for poplar/willow growing:

- Irrigated lands, more or less fertile
- Soil should be weak to moderate degree of salinization

Main stakeholders:

- Government
- Tenant farmers
- Industrial enterprises (potentially)
- Forestry farms

For tenant farmers /Industrial enterprises

- Set aside land from agricultural crop rotation as well as other land use categories
- absence of irrigation water quota for P&W growing

For forestry farms

- absence of irrigated lands in State forestry fund
- absence of irrigation water quota for non irrigated lands

For the State as only owner of agricultural lands :

- absence a legal base/Program for field-protective afforestation development on irrigated lands

Opportunities for poplars & willows to meet sustainable livelihoods & sustainable land-use

- Growing needs for construction, technical and firewood both for local population and for the growing industry in the country. P&W are the most suitable species to cover these needs.
- Soil-climatic conditions allow growing up here high-productive stands of P&W.
- There is a wishes of farmers to grow up more poplars and willows plantings of a different form (as a belts, plantation).
- There are the significant land areas in State forest fund as well as in different land categories favorable for creation of fast-growing tree species plantations for the different purposes.
-

Priority needs to support poplar & willow development

- **Government**

To make a systemic approach on P&W development

- **Tenant farmers**

Set aside irrigated lands for P&W growing

Consulting service on P&W

- **Industrial enterprises**

To get suitable lands for P&W growing

Irrigation water quota for P&W growing

Technology for P&W growing for different purposes

- **Forestry farms**

Irrigation water quota for P&W growing

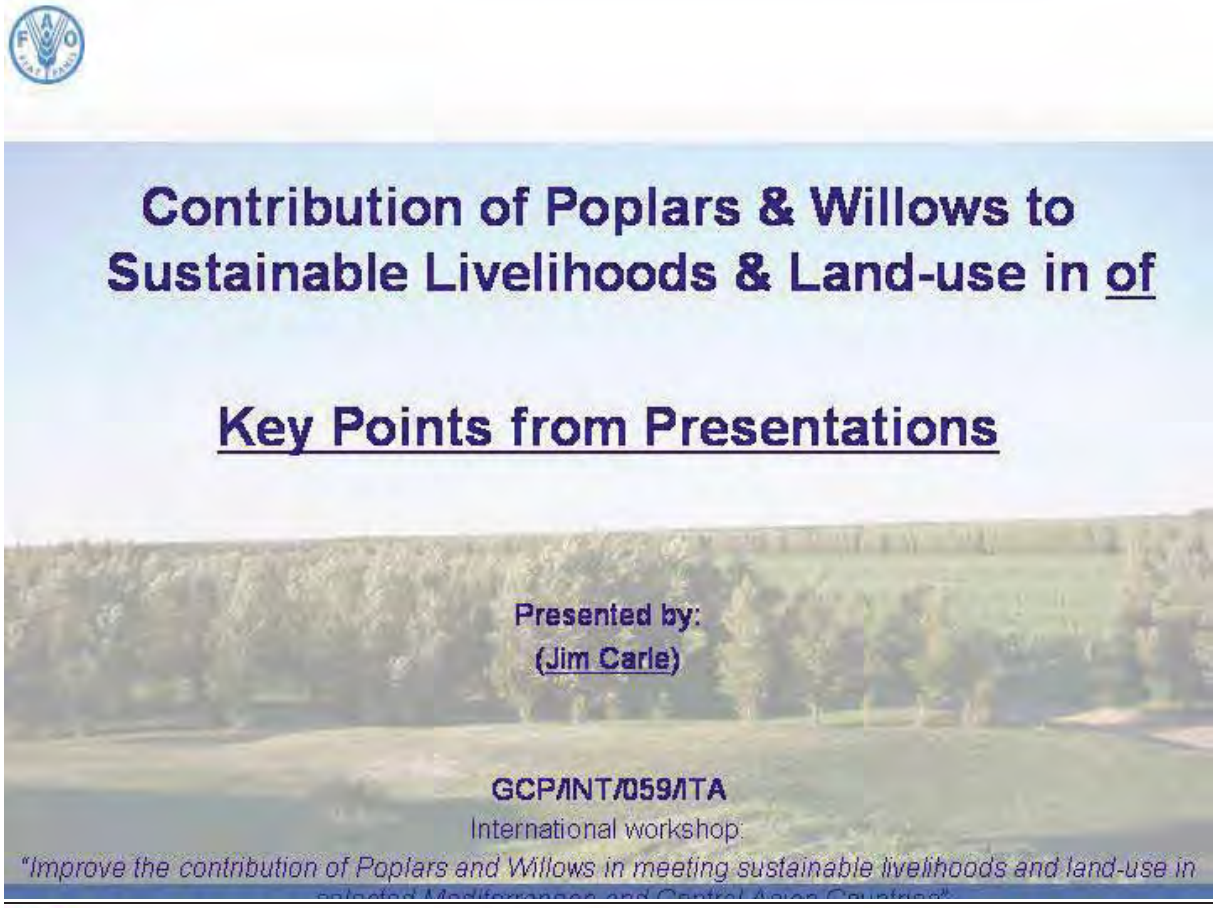
Technology for P&W growing for different purposes

- **Research institute**

To develop technologies (including water saving) for P&W growing for different purposes and different soil-climatic conditions

To test range of hybrids of P&W in different soil-climatic conditions

To use modeling for assessing P&W productivity for wide range of conditions


Contribution of Poplars & Willows to Sustainable Livelihoods & Land-use in of
Key Points from Presentations
Presented by:
(Jim Carle)
GCP/INT/059/ITA
International workshop:
"Improve the contribution of Poplars and Willows in meeting sustainable livelihoods and land-use in


Context: Poplar & willow culture
Poplar natural forests:
wide range of forests – conservation & protected areas, recreation (low % of land area)
Willow forests:
generally less forest areas than poplars – water courses etc
Intensive plantations, poplar:
10,000-50,000 ha expanding but facing difficulties to expand, production of wood, fibre and potentially wood energy, some rehabilitation of degraded lands, carbon forests
limited species, clones
Intensive plantations, willow:
limited plantations of willow – phyto remediation, bioenergy, treated water waste
Agroforestry, poplar:
diverse range of poplar mechanisms
Agroforestry willow:
relatively small willow agroforestry

Key stakeholders in poplar & willow development

- **Governance in P & W (policies, programs & technical support):**
  1. Environment & Forestry Ministries
  2. Agriculture & Forestry Ministries
  3. Agriculture Ministries
- **Research in P & W & Specializations**
  1. State Forest Institutes
  2. Universities
- **Education & Training in P & W**
  1. Most countries have Universities for professional training or access to neighboring countries
  2. Technical and operational training for forest managers & artisans exist, but need strengthening
  3. Strong need for forest extension (smallholders, farmers)
- **Investors in P & W afforestation/harvesting/end use**
  1. Government, State enterprises
  2. Farmers/smallholders, private lands – depend upon land-use & crop ownership rights
  3. Companies, private lands – depend upon land-use & crop ownership rights

Benefits from poplar & willow cultivation (economic, environmental & social)

- Benefits depend upon purpose, scale, investor & land-use
- P & W both very flexible & can be grown in a wide range of mechanisms from small to large scale
- P & W - carbon sequestration/storage, protection of waterways, soils, watersheds, shelter of villages, roads, public utilities bioenergy
- Willows phyto-remediation, treated and untreated water waste
- Poplars valuable supply of wood, fibre – many products
- rural employment, appropriate technology, in phase with livelihoods needs, local products for local people, help to combat urban drift, development of village based industries

Major issues in poplar & willow culture

- Need for coherent, consistent, clear policy, legal, regulatory frameworks – enabling conditions - invest
- Institutional frameworks (transition from centralized-decentralized systems) – strong state control, but emerging private sector private smallholder/farmers
- Inter-sectoral-multi-disciplinary nature of P & W institutions & management a challenge for foresters
- Limited species & clones => risk/vulnerabilities to insects, diseases and other pests
- Public & political negative perception about P & W
- Emerging issues of bioenergy, carbon sequestration are major for P & W
- Industrial use in the region is in infancy with strong emphases on protection, conservation etc
- Hydrology, water resources issues

Problems/constraints experienced in P & W culture

- State dominance, policy & legal frame not changed
- Bias against intensive P & W plantations (in infancy)
- Threats of insects, diseases, pests, fires, natural disasters (droughts, floods, winds etc)
- Changed hydrology, irrigation issues in arid lands
- Small private sector, uncertain market situation
- Lack of sustainability management tools
- Special needs of smallholder investors (extension)
- Poor public perception and negative bias for plantations and P & W

Opportunities for poplars & willows to meet sustainable livelihoods & sustainable land-use

- Enabling conditions for private smallholder & corporate
- Industry development, village based industries
- Extension services
- Renewable, energy efficient, environmentally sensitive provision of products and services
- Suitability for rehabilitation of degraded or marginal lands
- Less intensive management than annual crops
- Flexible over forestry and agricultural land-uses
- Carbon and bioenergy markets

Priority needs to support poplar & willow development

- Recognize & realize the multiple potentials of P & W
- Integrate institutional support systems – forestry and agriculture
- Improve policy, legal, and long term strategy development (including climate change mitigation, bioenergy etc)
- Collaboration between scientists to share research and results, better networking
- Link science-policy-practices
- Improve public awareness/understanding of P&W
- Pilot projects to demonstrate to politicians/public
- Support investment in industry development