

China-Croatia Joint Research Center for Ecological Environment Protection: Conceptual Approach

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Outline



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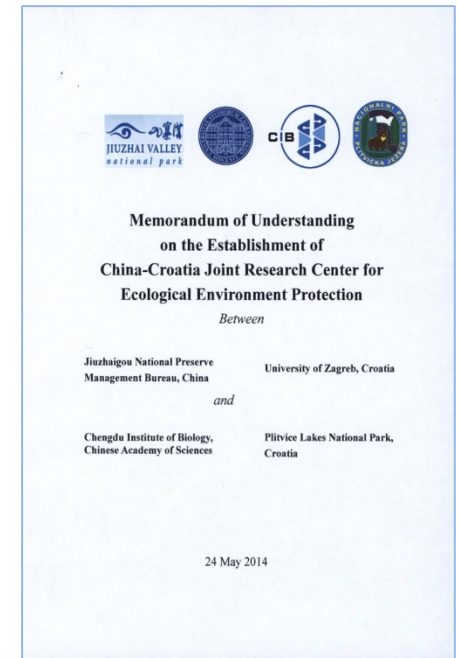
Cooperation Progress



China-Croatia Joint Research Center for Ecological Environment Protection **established** in May of 2014



刘延东：“加强中、克生态环保领域的合作有战略意义和广阔前景，相关单位在九寨沟的合作是中-克科技合作的典范。”



1

Cooperation Progress



On May 16th-19th, 2014,
**Ambassador of the
Republic of Croatia in the
People's Republic of
China** visited Sichuan to
support and promote
cooperation between
China and Croatia



1

Cooperation Progress



Annual Tourist number

Jiuzhaigou: 4.0 million

Plitvice Lakes: 1.2

million



World Natural Heritage

World-renowned Tourist Area

Jiuzhaigou

Plitvice

1

Cooperation Progress

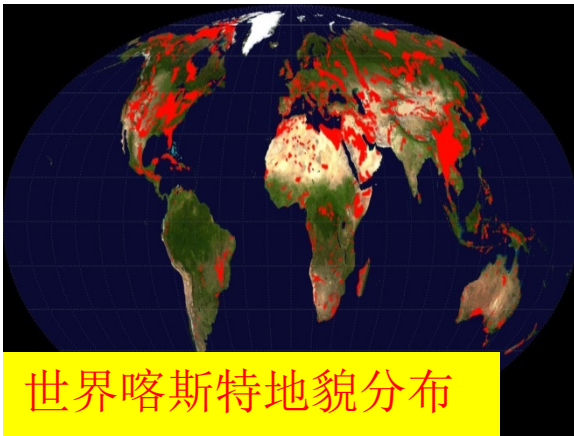


Under the background of climate change and increasing tourism



Cooperation started in 2009

- **Theory: Comparison of ecology and disturbance mechanism**
- **Technology: Outstanding universal value conservation**
- **Management: Establishment of sustainable tourism area**



世界喀斯特地貌分布



1

Cooperation Progress



Past and on-going cooperation projects

China and Croatia Inter-government project

2009-2011

- 九寨沟和克罗地亚普利特维采国家公园浮游植物群多样性和生态学比较研究 (2009-2011)
- 浮游植物在中国和克罗地亚喀斯特湖泊水质评价中的功用 (2011-2013)
- 基于生态系统服务功能的遗产地景区监测技术合作研究 (2015-2017)

MOST of China key project

- 九寨沟水资源与生态安全保护关键技术合作研究 (2014-2016)

Sichuan International project

- 旅游对九寨沟钙华景观的影响及其可持续管理 (2013-2015)
- 旅游对九寨沟-黄龙自然遗产地钙华景观的影响及其可持续管理 (2014-2016)
- 基于欧盟标准的九寨沟水质监测和钙华景观保护研究 (2015-2017)
- 九寨沟生态服务功能价值评估与演变趋势合作研究 (2016-2017)

CAS PIFI

- 中科院国际访问学者项目 (2015年)
- 俄乌白俄罗斯项目 (2014年)

Move 年

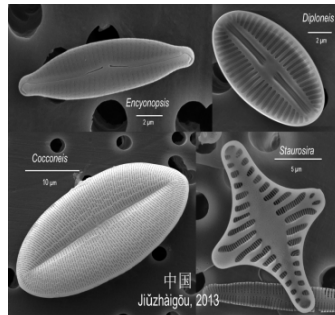
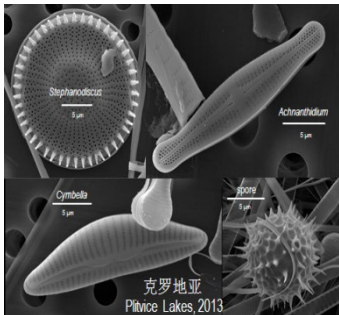
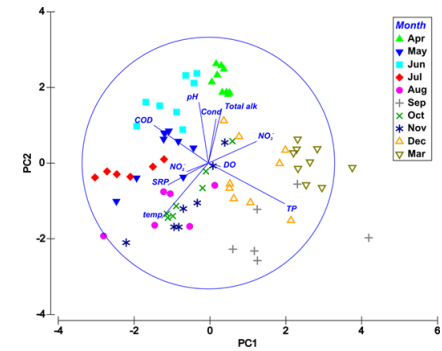
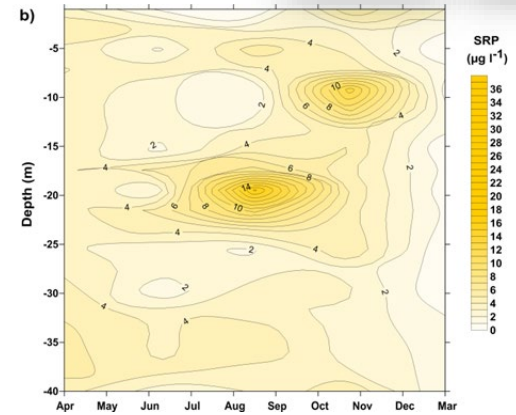
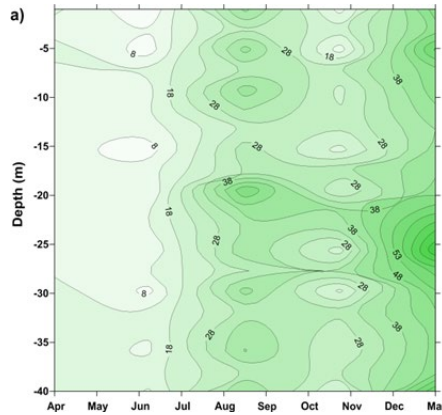
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Cooperation Progress



Cooperation research

- Water quantity and quality safety security key technology
- Biological Monitoring technology for water quality
- Ecological risk avoidance and treatment measures



CYANOBACTERIA - 128 species

- No. of genus=35
- *Chroococcus* - 20 species

RHODOPHYTA - 3 species

- No. of genus = 2
- 3 species

DINOPHYTA - 7 species

- No. of genus = 4
- 3 species

CHRYSOPHYCEAE - 5 species

- No. of genus = 2
- 5 species

EUGLENOPHYTA - 2 species

- No. of genus = 2
- 2 species

BACILARIOPHYCEAE - 387 species

- No. of genus = 76
- *Cymbella* - 46 species

CHLOROPHYTA - 48 species

- No. of genus = 24
- *Scenedesmus* - 7 species

CHAROPHYTA - 69 species

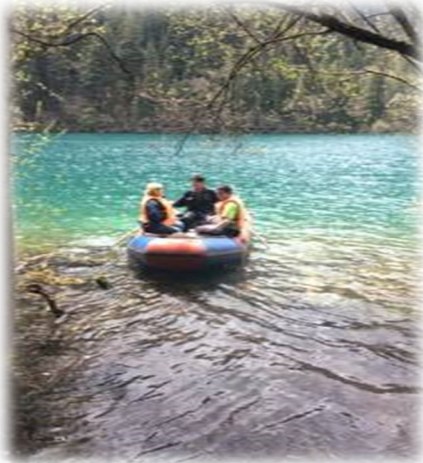
- No. of genus = 16
- *Cosmarium* - 20 species

1

Cooperation Progress



Achievements application



Collaborative field sampling and training for staffs



Consultation reports on sustainable management of Jiuzhaigou



Demonstration of biological monitoring technology systems

1

Cooperation Progress



Academic visiting and exchange

Don't understand
that

More than 15 persons
participated **and**
more than 50 times
academic visiting,
cooperation
investigation and
seminars





Croatia and “the Belt and the Road”

“一带一路”：
“丝绸之路经济带”与“海上丝绸之路”



Croatia locates in the convergence region of B&R



Croatia - a bridge tower role between East and West in the past

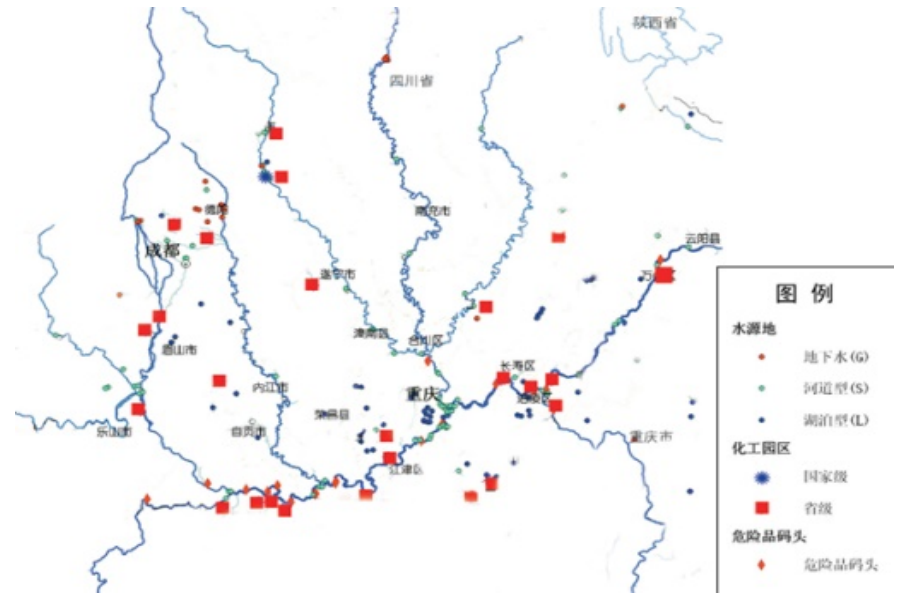
Marco Polo

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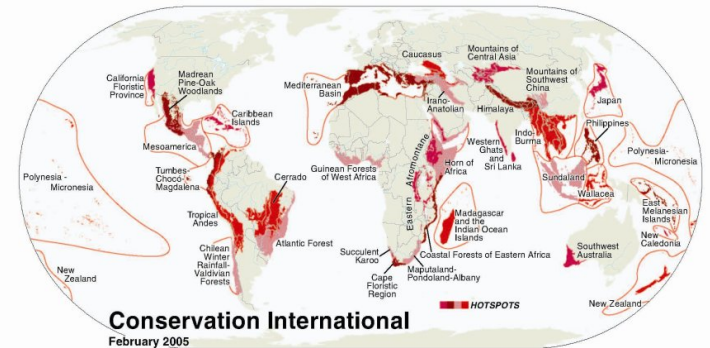
Background



The Yangtze River Economic Zone

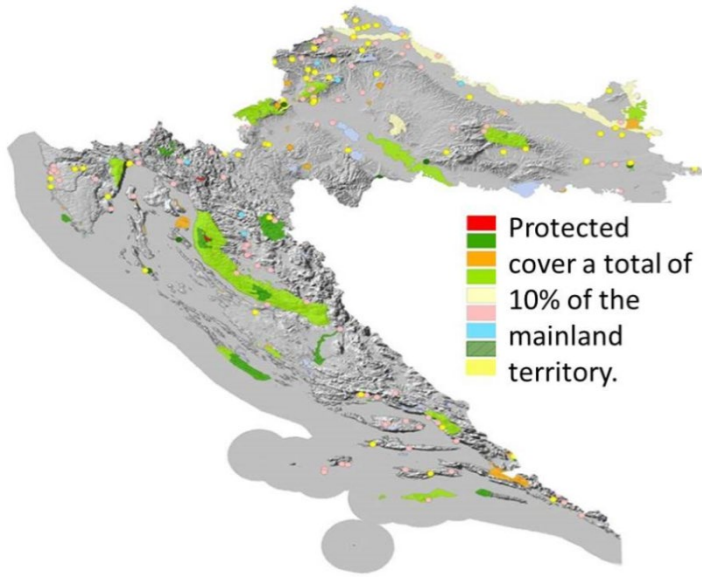


- Environmental pollution risk
- Ecosystem services degradation
- Sustainable watershed management
- Biodiversity hotspots



2

Background



- Biogeographical regions: Mediterranean, Alpine, Pannonian and Continental
- Forests occupy 44% of land surface
- Consequently one of the richest in EU in terms of biodiversity
- There are One UNESCO - World heritage list, two MAB - Biosphere Republic reserves, six Ramsar Wetlands, totally 450 protected areas



overground

underground



Danube River

2

Background



- The word ‘Karst’ originates from Croatia
- Karst topography makes up about half of Croatia and is especially prominent in the Dinaric Alps
- Tourism is pillar industry, stressing significance of ecological conservation



3

Institutional Framework



Based on Jiuzhaigou International Cooperation Research Base

Founders



Intra-region Institution



Advanced Institution in China



Central and Eastern Europe



Technology User



Univerza v Ljubljani



National park administration bureau
Enterprises for environmental protection
High-tech incubators

4

Mission



Dealing with problems from Croatia and China (especially the upper Yangtze River and Southwestern China), to become a leading international institution between China and Croatia in preserving biodiversity of natural heritage, conservation of natural resources and sustainable development and to provide:

- Research Platform Between China and Croatia (to expand to Central and Eastern Europe)
- Scientific and Technical Supporting for Sustainable Development of the Yangtze Economic Zone and Southwestern China

5 Targets



- Ecosystem conservation and sustainable management
- Water and soil pollution treatment
- Green agriculture



Faculty of Science



Faculty of Agriculture



Faculty of Chemical Engineering and Technology



Faculty of Pharmacy and Biochemistry



Faculty of Forestry



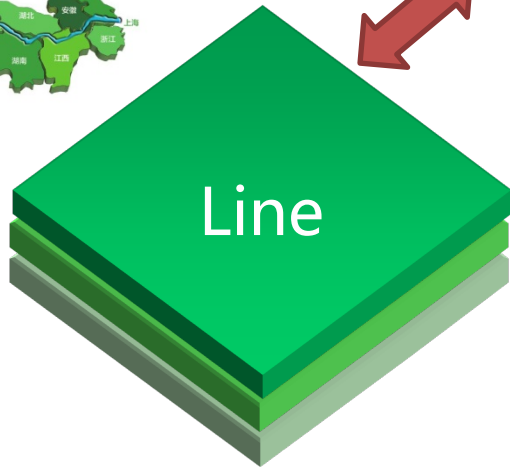
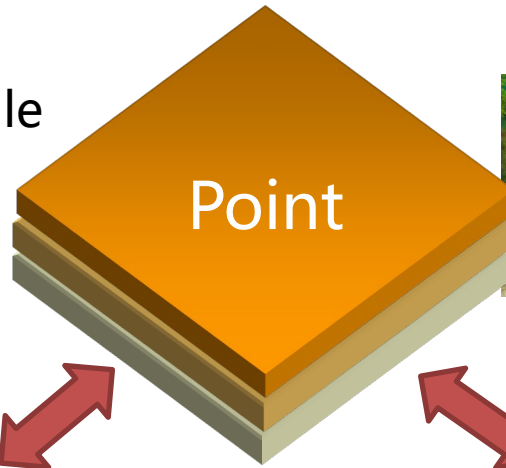
Faculty of Mining, Geology and Petroleum Engineering

5

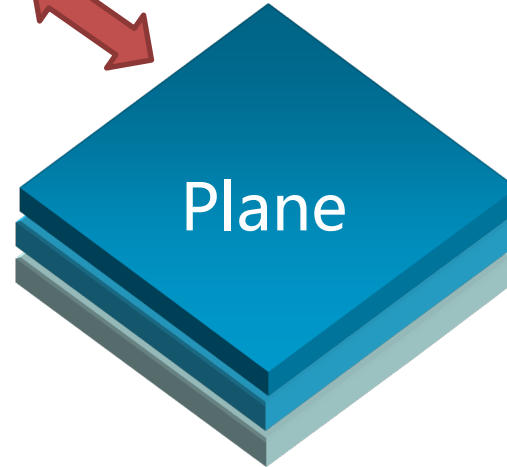
Targets



Important and fragile ecosystems



The Yangtze river and branches

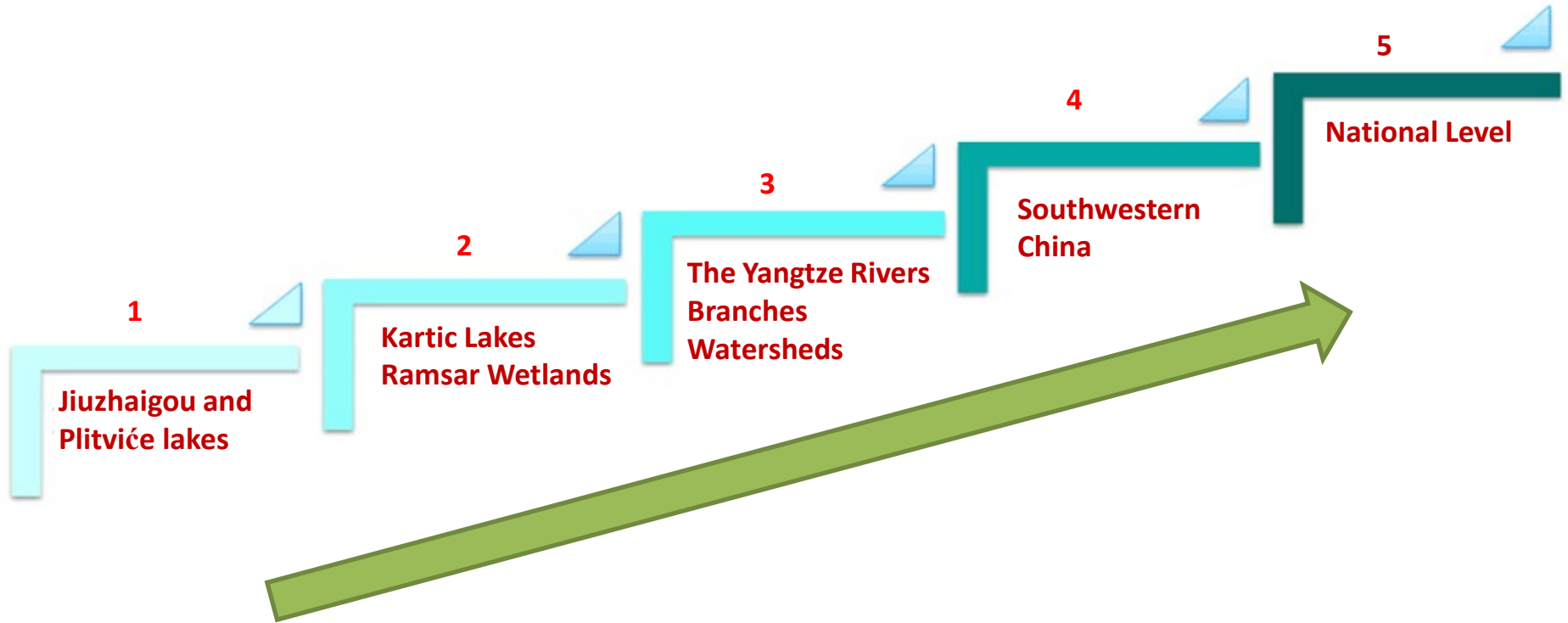


General problems in the Southwestern PRC

5 Targets



Ecosystem → Landscape → Region → Nation



6

Activities



Key ecosystems conservation and management

- World Natural heritage
- Karstic lakes and areas
- Ramsar wetlands
- Biodiversity hotspots
- degraded areas



6

Activities



The Yangtze River watershed conservation

- Water resource safety
- Water pollution treatment
- Large reservoir impacts and mitigation
- Watershed restoration and management





Green Agriculture

- Economic crops breeding and exchange
- Waste material recycling utilization
- Biological pesticide and organic fertilizer
- Efficient green cultivation





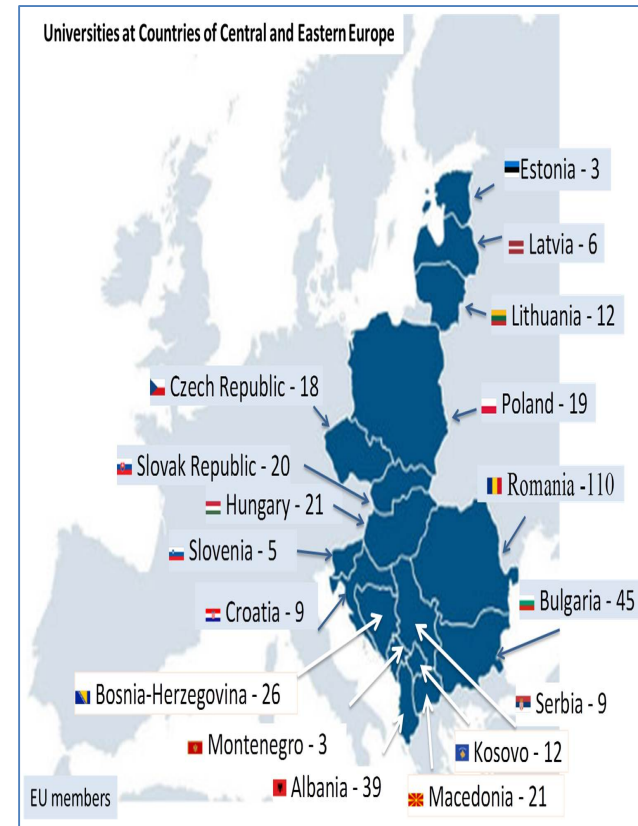
Platform Construction

- Basic database for natural resources and ecological monitoring
- Economic crops and biological resources specimen bank
- Information database for technology of ecological conservation and environmental protection



Academic Exchange and Talent Cultivation

- Signing agreements on collaborative research, academic visiting, Education between China and Croatia, expanding to other institutions from Central and Eastern Europe
- Promote **achievements** transformation and advanced technology exchange between China and Croatia
- Establishing ecological conservation joint lab for world natural heritage of Sichuan together with Jiuzhaigou and **Huanglong** bureau
- Introducing outstanding foreign researchers, supporting academic exchange and visiting for youth researchers





2017-2019

- World natural heritage conservation
- Karstic lakes ecological protection and restoration
- Economic crops breeding and resources exchange
- Platform between UNIZG and institutions in China

2019-2022

- Rivers and lakes conservation
- Green agriculture
- Soil and water pollution treatment
- Developing platform between Central and Eastern Europe and China

2022-

- Offer Consultation for central and local government
- Provide technology for enterprises
- Developed platform between Central and Eastern Europe and China

8

Operation



- **Academic Committee**
- **Office for coordinating and communicating**
- **Researchers and staffs**

9

Supporting Measures



- Supporting from CIB and Jiuzhaigou
- Supporting from MOST, CAS and local administration
- Applying for projects



Thanks for your attention

**WHEN NATURE GAVE US SO MUCH WEALTH
IT IS OUR DUTY TO PRESERVE IT FOR FUTURE GENERATIONS**