

INCREASING INTERNATIONAL STI COOPERATION BETWEEN BRAZIL AND THE EUROPEAN UNION

## **Training #2**

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# **Action Plan:**

# **Sustainable Use of Bioresources**



### **List of Hot Topics**

### Potential Hot Topics



- I. Sustainable Bioeconomy: Strong focus on integration of food and feed stock as well as rational and effective use of industrial and agricultural waste/effluent
- II. Food Security: Based on the aim of zero food waste (waste streams from agriproduction to house hold consumption) and well balanced nutritional status
- **III. Smart Cities** Urban systems for transport, energy, and resource distribution based on integrated sensors and connected appliances and machines.
- IV. Advanced Manufacturing Automated de-centralized manufacturing techniques that enable new products while improving resource efficiency to zero-waste.
- V. Solutions for the Elderly
- VI. Sustainable Use of Biodiversity for New Therapies and Conservation of Biodiversity Conserving bio-diversity for genetic research and advances in healthcare, and industrial processes.
- VII. Gene Therapy Research into genetic approaches for treatment of various health issues and conditions.
- VIII. Adaptation of Agriculture to Climate Change Exploring technologies and techniques that can maintain and improve agricultural output in the face of changing climate conditions.
- IX. Green Energy: Combining wind energy and biomass use, green house gas reduction technology

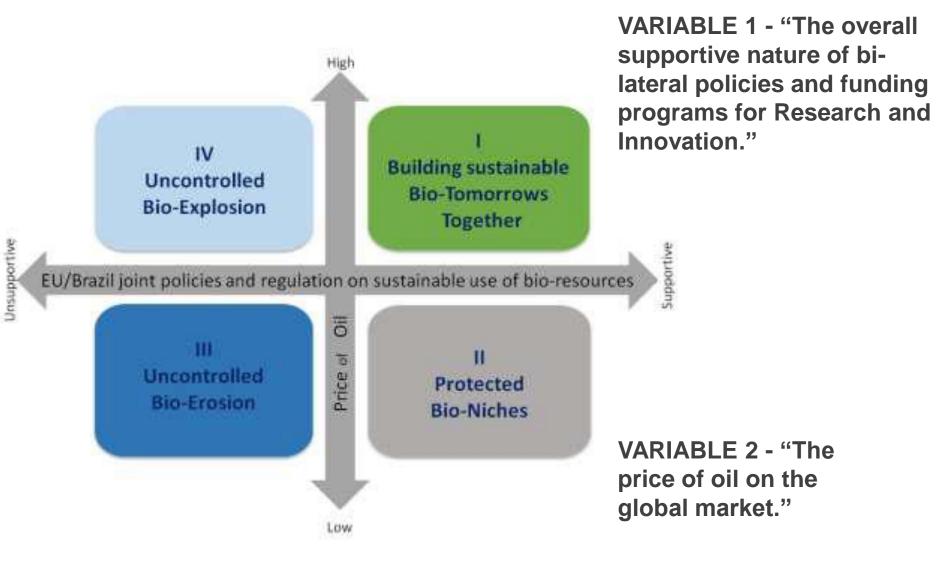


Five Strategic Areas for Cooperation & Draft Action Plans

- Areas for mutually beneficial R&I collaboration:
  - Green energy
  - Sustainable use of Bioresources (bulk and specific)
  - Food security & adaptation of agriculture to climate change
  - Smart cities & smart systems
  - Advanced manufacturing and nanomaterials
  - Each Action Plan developed by appropriate institution
  - Process:
    - Development of theme specific 2x2 scenario matrix
    - Short descriptions of four alternative scenarios
    - Identification of priorities and critical areas
    - Roadmapping Activity for detailed Action Plans



### Action Plan – Sustainable Use of Bioresources





### Action Plan – Sustainable Use of Bioresources

#### High

#### **IV Uncontrolled Explosion**

- High oil price fosters the use of bio-resources for products, materials and fuels
- Commercial interests are driving the focus of research and innovation
- Emergence of unsustainable and ineffective solutions, biodiversity sell out
- No special role of EU/Erazil cooperation
- Threat of Brazil being degraded to materials provider and EU losing R&I advantages

#### I Building sustainable Bio-Tomorrows Together

- High oil price fosters the use of bioresources for products, materials and fuels.
- Increased emphasis on sustainable management of bio-resources
- Erazil and the EU focus on the bio-economy and align strategies and jointly pioneer sustainable solutions together with major industry players
- Erazil and EU both become top R&I player in the Eio-economy

#### EU/Brazil joint policies and regulation on sustainable use of bio-resources

#### III Blo-Erosion

- Few market incentives to move away from fossil based industrial processes.
- Use of biodiversity for pharmaceutical use becomes main focus of bio-economy with
- Uncontrolled exploitation of plant biodiversity.
- Industrial bio-economy applications remain scorce, and often unsustainable
- No special role of EU/Brazil cooperation
- Danger of Brazil being degraded to materials provider with low R&Lexcellence

#### II Sustainable Niches

- Few market incentives to move away from fossil based industrial processes
- Sustainable of biodiversity for pharmaceutical use becomes main focus of bio-economy
- Erazil and EU jointly focus scarce funding resources on competence building for sustainable industrial bio-economy making the most of Brazil's natural advantage
- Joint pioneering experiments with advanced pilots

Price of Oil



## **PRIORITY AREAS**

• Sustainable industrial biotechnology especially future generations of sustainable biorefineries.

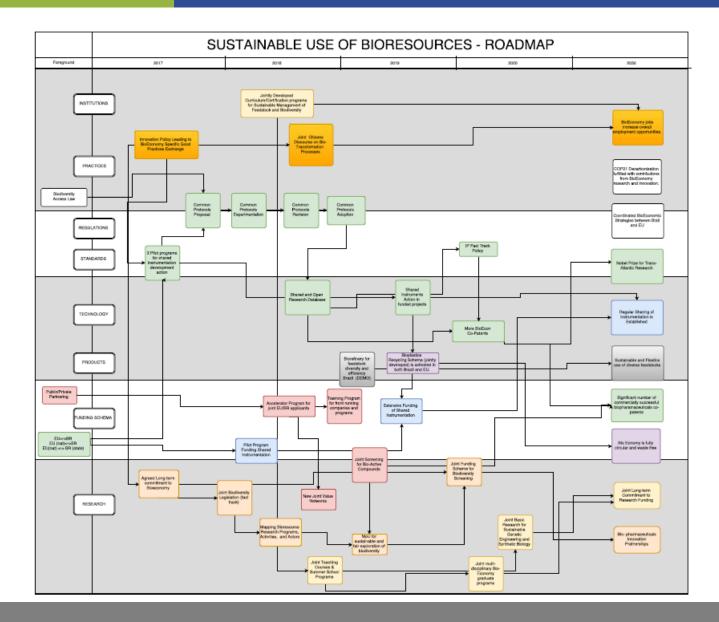
- Rational and effective use of industrial and agricultural waste/effluent.
- Conservation and sustainable use of biodiversity for new therapies.
- Rational and effective discovery and screening of bioactive compounds from the Brazilian biodiversity.
- Plant biotechnology.



## PRIORITY AREAS: EU-BR 2030

- A coordinated Bioeconomy Strategy between Brazil and the EU is in place
- Both countries jointly commit to a joint long-term research and innovation strategy of sustainable use of Bioresources
- A Biopharmaceuticals Innovation Partnership between Brazil and EU is established
- Bioeconomy jobs increase overall employment opportunities both in EU and Brazil
- The COP21 Decarbonization goals are fulfilled with contribution from EU-BR bioeconomy research and innovation
- The Bioeconomy is fully circular and waste free through joint efforts of EU and Brazil





Institutions & Practices

Regulations & Standards

Technology & Products

Research Policies & Agenda

Funding Schema



## **ROBUST TRAJECTORIES**

- EU-BR supportive regulatory framework for sustainable use of Bioresources
- EU-BR common knowledge base and research protocols on sustainable use of Bioresources
- Bilateral EU-BR commitment to long-range funding
- Involving civil society in the development of bioeconomy
- EU-BR sharing of bioeconomy research facilities
- EU-BR shared educational curriculum in sustainable use of Bioresources
- Create durable personal relationships between Brazilian and European researchers and innovators in sustainable use of Bioresources
- Foster EU-BR pioneering coalitions
- Experimenting breakthrough solutions in protected niches
- Optimising biowaste collection and utilization processes through bilateral development of policies, partnerships, and technologies



# Thank you!

## **Contact Us**

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