



Kingdom of Morocco

Ministry of Energy, Mines, Water and Environment
Department of Energy and Mines



The Regional Conference on: Renewable Energy and Sustainable Development in Rural Areas of the ESCWA Region

Stimulating the Role of Renewable Energy in Realizing, Water, Energy and Food Security Nexus in Rural Areas

By

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Requirements to Stimulate the Role of Renewable Energy in Realizing, Water, Energy and Food security Nexus in Rural Areas

I-Rural areas main features in the region

II- Critical Issues for Rural Areas Development

III-The Water, Energy and Food Security Nexus “WEFSN”

IV-The Role of Renewable Energy in Stimulating the WEFSN”

V-The Required Policy framework

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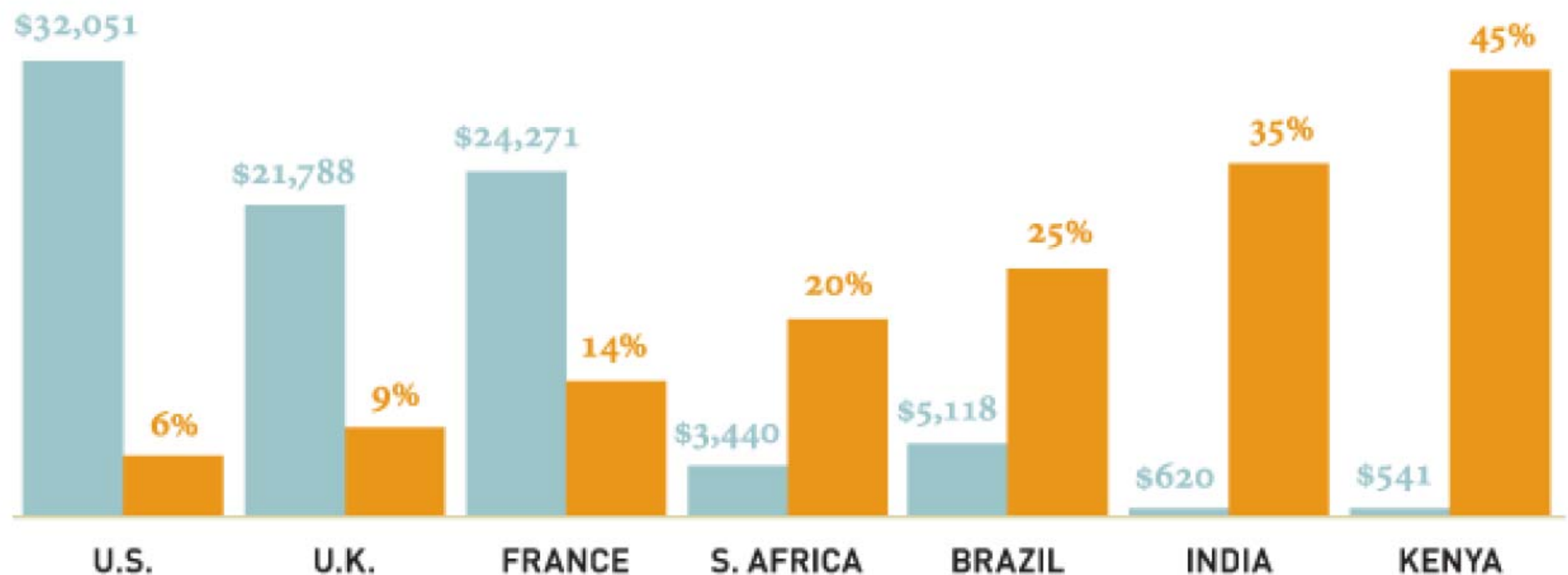
I-Rural areas main features in the region

- Food security: 50 % of ESCWA's food is imported . High food prices and international market volatility mean domestic agriculture has taken on strategic importance in the food producing countries in the region .The region is suffering from cultivated land scarcity.
- Poverty: 50% to 70% of Regions' poor live in rural areas . Chronic rural poverty is not generalized in the region (with the exception of Yemen).
- Unemployment: the unemployment rate in the region is 13% compared with 6% for all middle – income countries urban youth unemployment is given a priority.

The Poor Spend a High Percentage of Their Income on Food

Average total household expenditure

Percent of household expenditure spent on food

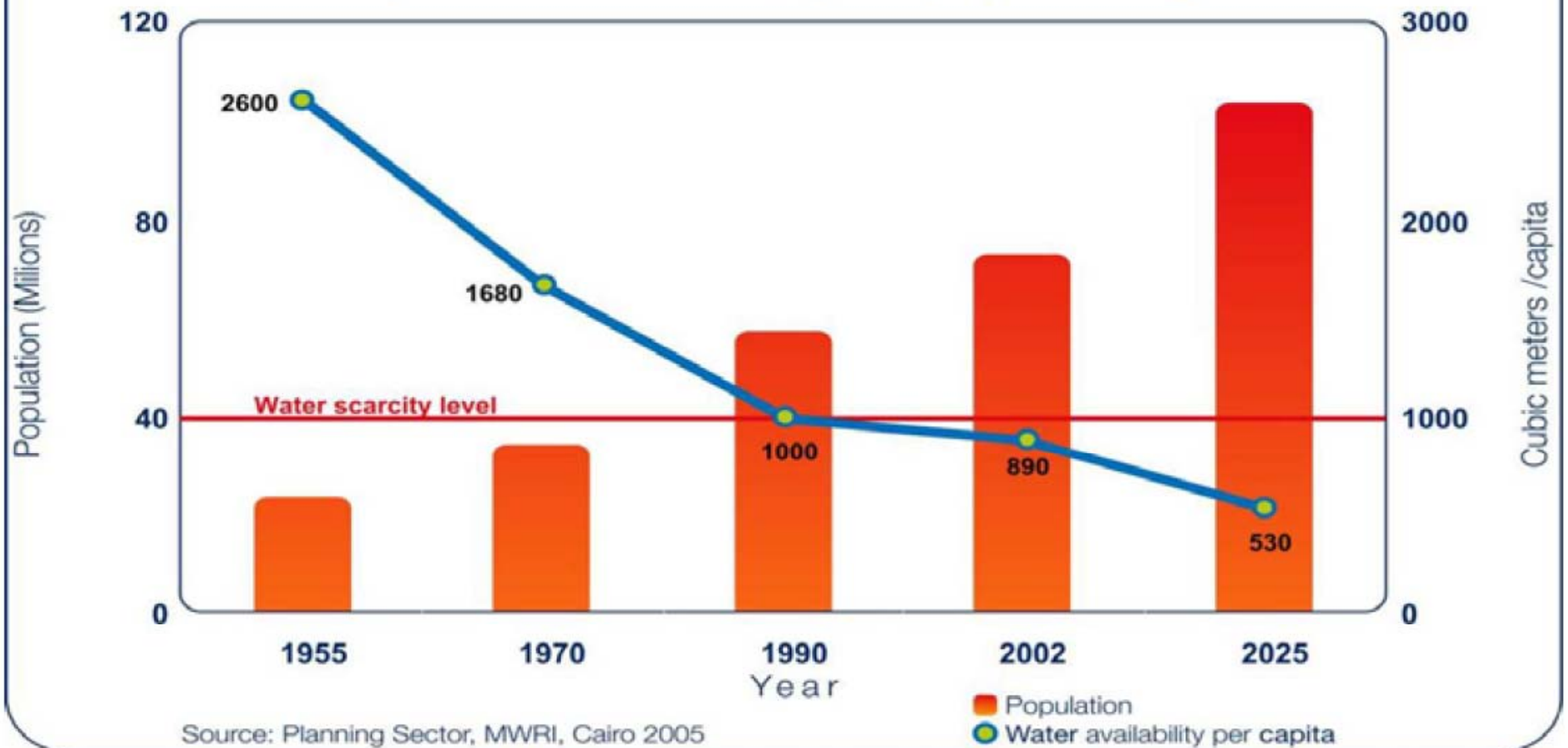


Sources: World Bank 2009; U.S. Department of Agriculture 2009; Euromonitor International

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- Growth and liberalization : the agriculture of MENA countries has the potential to become highly competitive for both export and domestic markets , helping diversify the sources of employment .
- Water : water withdrawals in the MENA region represent 67% of renewable water resources ,compared with 8% for the developing world overall. good agricultural irrigation policies can lead to appropriate water resource management.
- Energy : while the region has rich energy resources it is not evenly distributed and modern RE technologies are nor sufficiently deployed to rural areas.

Per capita water availability vs. population growth



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II- Critical Issues for Rural Areas Development

I-Enhancing agriculture production and returns:

- Diversification of agricultural production systems
- Agrarian reform and measures to secure equitable access to land by both genders
- Infrastructure development to enhance distribution to markets
- Reducing the environmental impacts of agriculture production
- improvements in water management in agriculture

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Critical Issues for Rural Areas Development

2- Enhancing food security:

- Community-based and indigenous approaches to sustainable food production
- Early warning systems , remote sensing and computerized food supply/ demand monitoring and analysis
- liberalization of agricultural product markets with focus on regional trade and economic integration

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3- Reducing Poverty through rural development:

- Integrating rural development strategies into Poverty Reduction Strategies
- The empowerment of local rural communities
- Supporting main driving forces for economic growth and social development
- Improving access to basic services and infrastructure

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III-The Water, Energy and Food Security Nexus

“WEFSN”

The “WEFSN” have been defined as human rights and means that the three sectors are inextricably linked and that actions in one area more often than not have impacts in one or both the other. They are defined by MDGs, CSD and FAO as:

Water security “access to safe drinking water and sanitation”. It is also important for other human and ecosystem uses

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Energy Security “access to clean, reliable and affordable energy services and productive uses” with full respect to environmental concerns”

Food Security “availability and access to sufficient, safe and nutritious food to meet the dietary needs and food preferences for an active and healthy life”

Emphasis on access in these definitions implies that security is not about average availability of resources but it encompass variability , extreme situations and the resilience of the poor

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Interactions among the Water, Energy and Food Security Sectors are Numerous and Substantial

- **Water** is used for extraction,, processing, refining and residue disposal of fossil fuels, for generating electricity as well as for growing feed stock for biofuels. Irrigation is more energy intensive than rain-fed agriculture, and drip irrigation is more intensive yet
- **Energy Production** with fossilis water intensive and highly polluting Further, return flows from power plants to rivers are warmer and/or highly polluted. however energy is needed for extracting, transporting, distributing and treating water.

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- **Food production** is by far the largest consumer of global fresh water supplies. agriculture is responsible for an average of (80%- 90%) of fresh water consumption in ESCWA countries.
- The full food and supply chain claims approximately 30% of total global energy demand mainly due to mechanization. Therefore increases in the price of oil lead very quickly to increases in the price of food.

The” WEFSN “Give way to reducing trade offs and builds synergies across the three sectors.

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Nexus Approach and Perspective

Nexus Approach

- An approach that integrates management and governance across/among the water, energy and food sectors to improve its integrated outcome.
- It can only be achieved through close collaboration and active participation of all actors from all sectors

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Nexus Perspective.

- Increase the understanding of the interdependencies across the three sectors
- Influence policies in other areas of concern such as climate and biodiversity.
- Help to increase opportunities and enhance the cooperation between and among sectors

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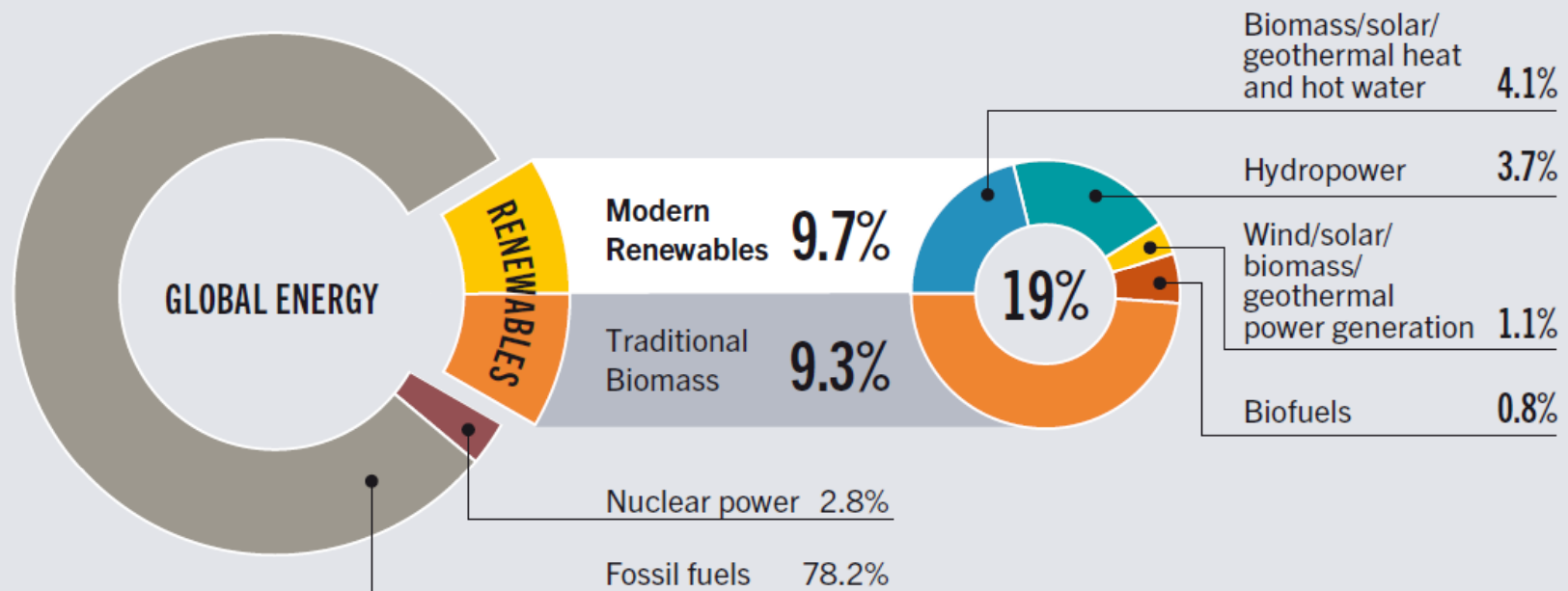
III-The Role of Renewable Energy in Stimulating the WEFSN”

-Currently, Renewable Energy technologies have developed to reach the market with different Application/Technology options while others are progressively approaching markets but:

Are we realizing its real state of art and serious about tapping and integrating it within our development plans particularly in Rural Areas?

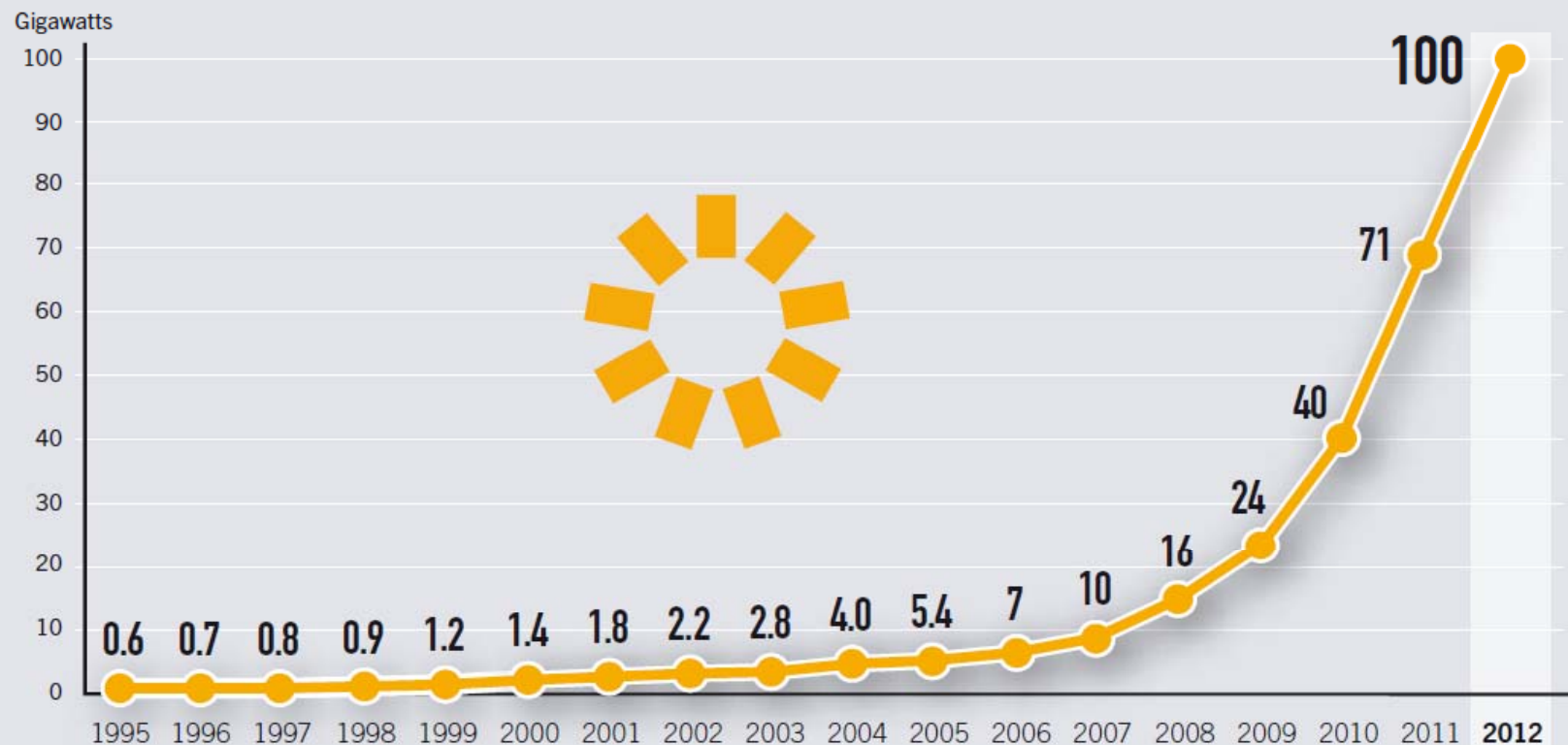
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FIGURE 1. ESTIMATED RENEWABLE ENERGY SHARE OF GLOBAL FINAL ENERGY CONSUMPTION, 2011



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FIGURE 11. SOLAR PV GLOBAL CAPACITY, 1995–2012



Renewable Energy Share in Electricity Production in 2011 and Future Plans

Country	2011, %	Target, %
Algeria	202 (2012)	5% by 2017 40% by 2030
Denmark	40	50% by 2020 100% by 2050
Egypt	11 (2012)	20% by 2020
France	12	27% by 2020
Germany	21	35% by 2020 50% by 2030

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Challenges of Renewable Energy in Rural Areas

- **Lack strategic integration** of energy issues within the development plans
- **Limited specific targets**, policies and regulations related to RE deployment in rural areas.
- **The institutional capacities** and technical expertise are not sufficiently directed to cater for rural development
- **Capital investment:** While RE initial capital costs coming down, still it's cost may not be affordable for poor in rural areas

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V-The Required Policy Framework and Actions

Realizing the opportunities provided by the
“WEFSN” perspective, implementation requires:

- **The right policies**, incentives and encouragement for integrated “WEFSN” approaches
- **Institutions and leaders** that are up to the task
Frameworks that encourage empowerment, research, information and education.

Actions for Promoting Renewable Energy in Rural Areas

- Encourage private sector partnerships on RE in rural areas supported by new financing and legal mechanisms.
- Raising understanding that low income consumers could create high growth markets.
- Further integration of RE policies with rural development plans.
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- Strengthened Institutional, financial and legal mechanisms to support and spread

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Promoting RE Market

- **Integrated infrastructure development**
- **Enable soft finances sources and credit guarantee for local manufactures**
- **Feed-in Tariff**
- **Net- Metering**
- **Taxes credits, customs reduction and support of green energy purchases**
- **Issuance of Renewable certificates**

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Priorities for Action

Transformative, integrated rural development and resource management within a “WEFSN” will require five priority actions.

1. Accelerate small holder food crop production within an integrated strategy
2. Expand and strengthen integrated landscape initiatives

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3-Develop investment platforms for integrated rural finance

4-Promote policy dialogue and strengthen governance to support integrated strategies

5-Allow decision-makers to develop appropriate policies, strategies and investments to explore and exploit synergies

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In conclusion

The region's needs to develop a new and powerful vision on "WEFSN", with clear goals, to mobilize action on "Integration- oriented governance," with effective communication, negotiation, analysis, and participation and harmonization of the work plans of various government ministries responsible for different aspects of rural development

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THANK YOU