

Policy Briefing

Sustainable development of oases' value chains

KEY MESSAGES

- ❖ In order to grow, develop and become competitive, all enterprises - whether medium, small or familial - need an **enabling environment**. Value chains are key elements of these networks, allowing various stakeholders to establish **cooperative ties** to organize all necessary activities that are required to bring a product from its design to its end use and its recycling.
- ❖ Value chains need **a dynamic value chain network** of stakeholders and operators, such as: producers, inter-mediate, small and large wholesalers collectors, retailers and small traders, street vendors, packers, processors, manufacturers and exporters - as well as at the end of the chain - customers or consumers.
- ❖ Arid regions, in general, and oases, in particular have considerable **assets and natural potential**, offering a wide range of fruit products, grains, vegetable and garden products, aromatic and medical plants and animal products, as well as by-products and waste products.
- ❖ But arid ecosystems are also characterized **by vulnerability and fragility** as a consequence of both endogenous and exogenous factors, and face **many threats**, such as: effects of climate change; overexploitation of groundwater; decline of traditional knowledge systems and breakdown of local institutions in charge of water management; gradual abandonment of traditional farming and pastoral systems; weakening of social capital and community solidarity relationships; and encroachment of urban areas.
- ❖ To fully develop, value chains in arid regions need to:
 - Have appropriate **legislative, administrative fiscal and regulatory frameworks**
 - Benefit from favorable conditions to enable actors and operators to access **credit and financial services**, and
 - Benefit from a wide range of **sensitization, information and capacity building initiatives** for all stakeholders, within specialized structures (such as producer groups).
- ❖ In terms of development policy, several measures should be taken by national and international development partners, particularly in relation to production, collection / marketing and packaging / processing of oasis products, within **socially inclusive competitive strategies**.

ENTERPRISES, NETWORKS AND VALUE CHAINS

In arid areas, as everywhere else, in order to grow, develop and become competitive, all enterprises - whether medium, small or familial - need an enabling environment and a dynamic network of stakeholders and operators.

Value chains are key elements of these networks. Within these chains, various stakeholders can establish **cooperative ties** to organize all necessary activities that are required to bring a product from its design to its end use and its recycling. Trade is increasingly based on coordinated activities of a whole range of actors and operators in the value chain, to determine the types and quantities of products, as well as process standards and terms of delivery.

Based on their specific skills and according to defined rules of the game, different stakeholders integrate **the dynamics of value chain** and participate directly or indirectly in the implementation, processing, transportation and distribution of a product or a group of products, from the very beginning to the final stage along the chain; they also contribute to the regulatory mechanisms of the flow of goods and productive assets.

VALUE CHAINS IN DESERT AREAS

Given the wealth of plant and animal biodiversity, desert regions, in general, and oases in particular have considerable **assets and natural potential**, offering a range of diverse products, by-products and waste products:

- ♣ **Fruits:** primarily dates, but also olives, grapes, figs, almonds, peaches, pomegranates, etc.
- ♣ **Grains:** barley, wheat, rice, maize
- ♣ **Vegetable and garden products:** tomato, pepper, onion, garlic, carrot, turnip, chard, parsley, etc.
- ♣ **Fodder:** alfalfa, forage sorghum, barley green, green maize, etc.
- ♣ **Industrial crops:** henna, tobacco, cotton
- ♣ **Animal products:** Meat, milk, hair and wool, leather and manure. The most popular species are: sheep, goats, camels, cattle. Small farms with rabbit breeding, poultry farming and beekeeping are also widespread in the oases.
- ♣ **Aromatic and medicinal plants:** Plants already widely established and subject to exploitation (rosemary, sagebrush, argan tree in Morocco, etc.), with the production of essential oils, and aromatic extracts (absolute) for different uses (food, cosmetic and pharmaceutical).
- ♣ In addition, many *by-products* have various uses, especially those derived from palm trees (leaves used for weaving baskets, hats, date tree trunks for wood for construction) and dates (for the production of vinegar, alcohol, yeast, flour, syrups, etc.).
- ♣ Finally, oases have large volumes of waste products (herbaceous and solid waste), which may be transformed, especially for livestock feed and compost (for a compost rich in organic and mineral matter) .

Because of their edaphic environment, traditional oases, with their three vegetative layers, form an ecosystem suitable for development of the biodiversity of flora and fauna, and for preservation of endangered plant and animal species.

THREATS TO OASIS ECOSYSTEMS

But oasis ecosystems are characterized by high **vulnerability and fragility**, as a consequence of endogenous and exogenous factors. The problems faced by oasis communities entail a rapid **downward spiral** of environmental degradation and poverty.

These ecosystems face **many threats**, such as: the decline of traditional knowledge systems and the collapse of local institutions in charge of water management and their replacement by state institutions; gradual abandonment of traditional farming systems; insufficient infor-



mation and statistical data on the market (especially for aromatic and medicinal plants); weakening of social capital and community solidarity relationships; pollution; floods and sand silting; and encroachment of urban areas. Overexploitation of groundwater is a serious problem that threatens

the sustainability of oasis systems. Oases are also particularly vulnerable to many forms of degradation mainly caused by urban encroachment. Finally, social capital is increasingly fragile, with the weakening of relations of solidarity within communities.

Climate change is also likely to result in profound changes in the functioning of oasis ecosystems, causing major events, such as: higher temperatures; more frequent and intense heat waves; succession of very dry years; disruptions in rainfall patterns; changes in the growth cycle of crop varieties and of their productivity; deterioration in the quality of dates (due to extreme heat periods or anticipated debut of rain); flooding (especially in mountain oasis located on normally dry rivers); loss of crops; and abandonment of certain crops.

Oasis areas should experience a warming of 1.1° C by 2030 and 2.1° C by 2050 (relative to 1961-1990) and of 1.1°C and 2.9°C by 2100.17

ACTORS AND OPERATORS

From production to consumption stage, **numerous actors and institutions** succeed and complement each other through operations that characterize the value chains of oasis products.

The various operators of these value chains are: producers, inter-mediate, small and large wholesalers collectors, retailers and small traders, street vendors, packers, processors, manufacturers and exporters, and - at the end of the chain - customers or consumers.

Other players are also involved, more or less directly, in the chain value system, namely municipal officials and administrators (particularly agricultural departments and sectoral technical services, at national, regional and local levels), managers of socio-professional structures (farmers' unions, socio-professional groups, cooperatives, trade unions, etc.), representatives of civil society associations, and women groups.

DEVELOPING ARID REGIONS' VALUE CHAINS

Faced with threat from social, environmental and climate factors, full development of the value chains in arid regions require the following :

- Appropriate **legislative, fiscal, administrative and regulatory frameworks** to improve the governance of oases. This would aim at defining the conditions for access to and use of natural resources (especially water), protection of biodiversity, anti-pollution measures, and regulation of pesticide uses). It would support enterprises to achieve higher productivity and enhance the competitiveness of their business. It would also create jobs and generate revenue through economies of scale, by fostering the active participation of local communities in planning and implementing development activities.
- Favorable conditions for actors and operators (particularly women and youth) to access **credit and financial services**, in order to promote a social and solidarity economy, support private investment, acquisition of equipment and technology, and employment of competent staff, as well as improvement of local livelihoods.
- A wide range of **capacity building initiatives** for all stakeholders involved in value chain operations. This would include: (i) enhanced **communication and information** to increase the awareness of local populations and different stakeholders (operators, skilled workers, etc.) about the importance of the local natural heritage and the various opportunities for development and creation of innovative projects with high potential of employability and added value (especially for young men and women); and (ii) creation or reinforcement of specialized structures (in the form of producer groups), able to effectively address the valuation and marketing of products and the development and management of value chains.

It is imperative to promote the future role of women in the development of value chain lines, particularly through creation of fully autonomous micro-projects.

KEY MEASURES

In terms of development policy, several measures need to be taken by national and international development partners, particularly in relation to production, collection / marketing and packaging / processing of oases products:

- **Production.** Production is the crucial operation for overall agricultural and agro-alimentary development. Any initiative aimed at improving production needs to enhance: (i) **communication infrastructures** (paved and feeder roads, and means of communication and transport for the flow of goods and supply of inputs to and from the oases), and (ii) **water infrastructure and equipment** (through joint purchase of equipment, as well as management and maintenance). It would also be appropriate to add value to local products and to rehabilitate and strengthen their production potential through, for example, replacement of old palms and trees, new plantings, conservation of plant biodiversity (date palms, fruit trees, vegetable and garden crops, and forage) and, protection of endangered and rare varieties).
- **Collection and marketing.** It will be important to promote initiatives aimed at building effective value chains for the distribution and sale of oasis products in various forms and through different steps (adequate storage rooms, cold stores, warehouses or retail spaces that meet quality standards). The commercial value chain requires, among other things, a planning favoring the flow of goods, collective actions for the identification of new opportunities.

- **Packaging and processing.** In order to achieve positive synergies, the promotion of packaging and processing operations of end products will be necessary (in specialized workshops). These operations should help to enhance diverse oasis products with economic benefits and spillovers for all related productive activity services in the region. This would ultimately create jobs for women and young people at different skill levels, with the introduction of new technologies (namely for product packaging) and in conditioning units according to highest quality standards.

KEY REFERENCES

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- ❖ Collectif Stratégies Alimentaires (2013) *L'Approche filière : Conception, avantages et risques pour l'agriculture familiale* (CSA Bruxelles) (http://www.csa-be.org/IMG/pdf_Rapport_Filiere_FINAL.pdf)
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Selected Web sites

www.raddo.org: Network of Associations for sustainable development of Oases in the Maghreb.
<http://andzoa.ma/fr/strategie-de-developpement/>: National Agency for the Development of Oasis areas and argan in Morocco)

This Policy Brief is based on three documents prepared within the framework of the MENA-DERP Project:

- Sghaier M. (2014) *Perspectives de développement de l'approche filière pour la structuration des activités des communautés locales au niveau des oasis de la région MENA*
- Neffati M. – Sghaier M/ (2014) *Développement et valorisation des plantes aromatiques et médicinales (PAM) au niveau des zones désertiques de la région MENA*
- Mohamed Ben Salah (2014) *Le recyclage des sous-produits des oasis : Acquis et perspectives*

All documents are available on line on the MENA-DERP Web site.