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They complement traditional forestry nurseries focused on timber seedlings by helping farmers produce diverse food trees of their choice for on-farm planting or sale to other community members. Members can also diversify tree production with leafy vegetables at the hub or produce planting materials for home gardening. This often creates opportunities that especially benefit youth and women through income generating activities. These activities may involve marketing tree seedlings, supplying fruit scions and providing skills such as fruit grafting for a fee. In sum, **RRC serve complementary rural advisory roles, helping local communities to better: (i) diversify food tree planting materials; (ii) multiply and disseminate diverse food trees; (iii) secure income generation activities; and (iv) scale food**

production options with fruits and leafy vegetables. Marshalling knowledge and materials on local food genetic resources boosts appreciation of diverse local foods, while also helping to fill hunger gaps caused by over reliance on a few staple crops prone to drought problems that arise in Africa.

Contact

Sammy Carsan (ICRAF, CGIAR, Kenya), s.carsan@cgiar.org

Other authors

Catherine Dembele (*Institut de l'Environnement et de Recherches Agricoles, INERA, Burkina Faso*)

Athanase Mukuralinda (ICRAF, CGIAR, Rwanda)

Catherine Muthuri (ICRAF, CGIAR, Kenya)

For further information

• Takoutsing B., Tchoundjeu Z., Degrande A., Asaah E., Tsobeng A., 2014. Scaling-up sustainable land management practices through the concept of the rural resource centre: reconciling farmers' interests with research agendas. *International Journal of Agricultural Extension Education*, 20(5): 463-483.
<http://dx.doi.org/10.1080/1389224X.2014.913984>

• Major impacts and outcomes of RRC:
www.worldagroforestry.org/node/105018

Innovative camel production systems and insertion in local value chains

Camel rearing has long been associated with low-input mobile herding. However, this livestock sector has been undergoing a marked change towards intensified milk and meat production and sports performances (camel races) in many parts of the world (Middle East, Central Asia, China and North Africa). This change is reflected in the modernization of production practices (mechanical milking, feed-lots), the use of reproductive biotechnologies (artificial insemination, embryo transfer) and enhanced integration in local or national markets, thereby substantially boosting the value of camel products (milk, meat) that were not previously marketed. There have also been major changes in feeding methods, with a clear shift away from

exclusive rangeland grazing to rational feeding with fodder sourced mainly from irrigated areas in regions markedly impacted by water shortages. The pressure of this feeding system on water resources is not comparable to that exerted by Holstein dairy cattle farming in desert regions, but the use of irrigated fodder crops still seems hard to maintain in the dryland conditions that generally prevail in 'camel countries'.

A potential alternative could include the systematic use of by-products of oasis agriculture (date and olive waste), as well as the development of salt-tolerant forage crops. Indeed, camels very well tolerate salt-rich rations and some more or less halophytic forage species such as *Sporobolus virginicus* and

Chloris gayana, which may grow on plots irrigated with otherwise unusable brackish water. When associated with forage shrubs such as *Moringa oleifera*, these halophytic crops could provide sufficient feed for camels.

Contact

Bernard Faye (SELMET, CIRAD, France), bjfaye50@gmail.com

For further information

• El-Shaar H.M., 2010. Halophytes and salt-tolerant plants as potential forage for ruminants in the Near East region. *Small Rumin. Res.*, 91(1): 3-12.
<https://doi.org/10.1016/j.smallrumres.2010.01.010>

• Faye B., 2016. The camel, new challenges for a sustainable development. *Trop. Anim. Health Prod.*, 48: 689-692.
<https://doi.org/10.1007/s11250-016-0995-8>



▲ Signboard for pasteurized camel milk on El-Oued market (Algeria).
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▲ Mechanical milking of dairy camels in the Kharj farm (Saudi Arabia).
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