

Curriculum Vitae

Name: Mohamed El Mukhtar Ballal Siddig

Current Position: Director – Forestry Research Centre, Khartoum and National Coordinator of Gum Arabic Research, Agricultural Research Corporation, Sudan.

Personal Data:

Birth Date: 1955

Place of birth: El Nihod, Sudan

Marital Status: Married, 2 Children

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Competency: *Gums/resins production, management and silviculture of trees in drylands; agroforestry; tree improvement; ecological and environmental issues.*

EDUCATION:

B.Sc. Forestry, University of Khartoum, Sudan, 1979.

M.Sc. Plant ecology, University of Gezira, Sudan, 1983.

M.Sc. Environmental forestry, University of Wales, UK, 1991.

PhD. Forest management – gum arabic yield, University of Khartoum, Sudan, 2002.

PUBLICATIONS:

Ballal, M. E., Salih, N. K., and Abdel Magid, T. D. 2014. Ethno-botany of natural forests of Nuba mountains, South Kordofan, Sudan. *Journal of forest products and industries*. 3(1): 13 – 19.

El Amin, E. E., Ballal, M. E., and Mahmoud, A. E. 2013. Gum arabic (*Acacia senegal* (L.) Willd) viscosity in relation to rainfall and soil metal ions. *Journal of forest products and industries*. Vol. 2. No. 6.

El Amin, E. E., Ballal, M. E., and Mahmoud, A. E. 2013. Effect of soil type and rainfall on *Acacia senegal* (L.) Willd. gum viscosity. *Journal of natural resources and environmental studies*. Vol. 1. 3, pp 6-9.

- Seidahmed, H. A., Ballal, M. E., and Mahgoub, A. 2013. Sodicity tolerance of *Moringa oplifera*, *Acacia senegal* and *Acacia tortilis* subspp. Radiana seedling. *Journal of natural resources and environmental studies*. Vol. 1. 2., pp 4-6
- Ballal, M. E. 2012. Towards achieving stability and sustainability of gum arabic production (*Acacia senegal*) production in Sudan. In *Gum Arabic Book*. Edited by Kennedy J. F., Philips. G. O. and Williams, P. A. The Royal Society of Chemistry, UK.
- Adam, I. M., **Ballal**, M. El., Elsheikh E. S., and Fadl, K. M. 2010. A note on effect of tapping tools and date of tapping on *Acacia polycantha* (L.) Willd. gum yield in Southern . *Sudan J. Des. Res.* 2: 111-119.
- Idris Musa Adam. Mohamed El Mukhtar Ballal and Kamal E.M. Fadl (2009). Effect of tapping direction in relation to sun light on gum arabic *Acacia senegal* (L.) Willd. Yields in North Kordofan State, Sudan. *Forests, Trees and Livelihoods*, Volume 19 No 2 (2009).
- Ballal M. E., Talaat, A. and Hamid,A. A. 2008. Forest-related traditional knowledge with emphasis on *Acacia senegal* bush-fallow systems in the Sudan. Special issue on the occasion of: The Joint Meeting of the African Forestry and Wildlife Commission (AFWC) and the Near East Forestry Commission (NEFC). *Sudan Silva Vol.XI (1): 67 –77*.
- Ballal, M. E., El Siddig, E. A., Luukkanen, O., and Elfadl, M,A. 2005. Gum arabic yield in differently managed stands of *Acacia senegal* (L.) Willd. in Western Sudan. *Agroforestry Systems*.63:237 -245
- Ballal, M. E., El Siddig, E. A., and Luukkanen, O., and Elfadl, M, A. 2005. Relationship between climatic factors, tapping date, tapping intensity and gum arabic yield of *Acacia senegal* (L.) Willd. plantations in Western Sudan. *Journal of Arid Environments Vol. 63 (2): 379 – 389*.
- Omer, M. A., El Tahir, B. A., **Ballal**, M. E. and Korak, A. 2003. Response of *Acacia senegal* to post-rainy season irrigation and grass mulch in sandy soils of North Kordofan. *U. of K. J. Agric. Sci.* 11 (3), pp 414 – 430.
- Abdel-Rahman, H. M., Warrag, E. I., and **Ballal**. M. E. (2003). Effects of tree age and shoot morphology of *Acacia senegal* (L.) Willd. on gum yield in North Kordofan State. *Sudan Silva* 9(2), pp. 56 – 66.
- Ballal, M. E. 1996. Effects of some nursery practices on quality and field performance of *Acacia senegal* seedlings in western Sudan. *U. of K. J. Agric. Sci.* 4(2), pp 128-149.
- Ibrahim, A., **Ballal**, M. E. and Wahbi 1987. Viability and propagation of mesquite (*Prosopis chilensis*) seeds, *Sudan Silva* 26 vol, VI.
- Ballal, M. E. 1993. Pigeonpea research for rainfed and irrigated production systems in western and central Sudan. In: Improvement of pigeonpea in Eastern and Southern Africa: Proceedings of Annual Research Planning meeting, Bulawayo, Zimbabwe, ICRISAT, India. ed. S. N. Silim, S. Tuwafe and Laxman singh, pp 25-27.
- Ballal, M. E. 1986. Phenology, pod production and seed treatment of mesquite (*Prosopis chilensis*) in the Sudan, *Pamphlet No. 6*, Forestry Research Centre, Sudan.

- Hassan A. A. and **Ballal. M. E.** 2009 . Gum Arabic yield (*Acacia Senegal*) levels at El Nihoud, Ghebeish and Assalam localities in greater Kordofan. Accepted for publication at *U. of K. J. Agric. Sci.*
- El Tahir B. A., **Ballal. M.E.**, and El Fadni, O. 2004. A proposed plan of action for scientific research on desertification: Greater Kordofan. Proceedings of the National Forum of Scientific Research on Desertification in the Sudan, ed. Mustafa, M, A. and Mahadi, A. A. pp.176 – 197.
- El Fadni, O., El Tahir B. A. and **Ballal M. E.** 2000. The role of El Obeid Agricultural Research Station in lessening the impact of drought and desertification (In Arabic). Proceedings of the workshop on the role of research in controlling desertification: held in 18 September 2000 at the Arab Organization for Agricultural development, Agricultural Research Corporation and the Ministry of Science and Technology, pp 63 - 72.

Workshop Papers

- Ballal, M. E. 2007. Role of traditional knowledge in forest management and use of forests products in North and South Kordofan States. DAAD Workshop 53. Kordofan University: in collaboration with University of Technology (Germany), Moi University (Kenya) and Debub University (Ethiopia). 9-15 September 2007. El Obeid, Sudan.
- Ballal, M. E. and Hammad, Z. M. 2007. Biological and socioeconomic transformations in *Acacia senegal* agroforestry system in North Kordofan State. DAAD Workshop 53. Kordofan University in collaboration with University of Technology (Germany), Moi University (Kenya) and Debub University (Ethiopia). 9-15 September 2007. El Obeid, Sudan.
- Ballal, M. E. Adam A. A, and Hatim M. 2007. Selected Afforestation Activities of North and South Kordofan Forestry Sector. DAAD Workshop 53. Kordofan University in collaboration with University of Technology (Germany), Moi University (Kenya) and Debub University (Ethiopia). 9-15 September 2007. El Obeid, Sudan.
- Ballal M. E 2006. Management of *Acacia senegal* for gum arabic yield/production in western Sudan. DAAD expert seminar for revising and complementing teaching modules on research on natural sciences, February 28 – march 8, 2006. El Obeid, Sudan.
- Ballal M. E 2006. Improvement of gum arabic production in the Sudan. Workshop on Improving the Production and Marketing of Gum Arabic. Forests National Corporation (FNC) in collaboration with FAO and SOS, 27 -29 November, 2006. El Obeid, Sudan.
- El Tahir B. A., **Ballal. M.E.**, and El Fadni, O. 2004. A proposed plan of action for scientific research on desertification: Greater Kordofan. Proceedings of the National Forum of Scientific Research on Desertification in the Sudan, ed. Mustafa, M, A. and Mahadi, A. A. pp.176 – 197.

Released Technologies by the National Crop Husbandry Committee, Agricultural Research Corporation (ARC), Sudan:

1. Towards achieving stability and sustainability of gum arabic production: gum arabic yield (*Acacia senegal*) in relation to stand type and management in North Kordofan

2. Relationship Between Climatic Factors, Tapping and Gum Arabic Yield of *Acacia senegal* Plantations in Western Sudan
3. Effect of tapping direction in relation to sun light on gum arabic (*Acacia senegal* (L.) Willd.) yield in North Kordofan State. (45th National Crop Husbandry Meeting, ARC, Wad Medani, 21 December, 2008)
4. Effect of tapping tools and date of tapping on gum yield of *Acacia polyacantha* Willd. (Kakamout) in South Kordofan. (Technology released in the 46th National Crop Husbandry Committee, Agricultural Research Corporation (ARC), Wad Medani, 7 July 2009.
5. Ali, A. H., Ballal, M. E., and Fadl, K. M. 2013. Frankincense yield of *Boswellia papyrifera* in relation to some management factors in South Kordofan State. (Technology released in the 53 National Crop Husbandry Committee, Agricultural Research Corporation (ARC), Wad Medani, June, 2013.

Technical Manuals

- Ballal, M.E. 2004 for NGARA. Strengthening the Production and Quality Control of Gums and Resins in Africa, Master Plan for Training. FAO: TCP/RAF/2914, GTFS/RAF/387/ITA
- El Tahir B. A. and **Ballal M. E.** 2001. Field Manual on Forestry and Range. North Krdofan Rural Development Project – IFAD, Sudan.
- Ballal, M.E. 2004. A training manual on gum arabic production and management. Restocking of the Gum Belt Project – North Kordofan (UNSO).
- Talaat, A., **Ballal, M. E.**, and Tag Al sir U. 2006. A manual on traditional knowledge in forest management and use of forests products in South Kordofan State, Manual published by Sudanese Social Afforestation Society.
- Ballal, M.E. Field manual on best practices and methods for gum Arabic production: tapping, collection and storage. Rehabilitation of Areas Inhabited by Refugees Project (UNHCR) in Gedaref, eastern Sudan.

CONTRIBUTION TO DEVELOPMENT STUDIES/CONSULTANCIES (Examples)

- 2012 National Scoping Study of Restoration and Rehabilitation in the Sudan. Consultancy for Centre for International Forestry Research (CIFOR)
- 2011 Formulating a strategy for production, value addition and marketing of NWFPs from arid and semi arid lands (ASAL) in Sudan. A study for IGAD, March, 2011.
- 2009 Implementation manual. Revitalization of gum arabic production and marketing project. FNC and IFAD.
- 2007 Marketing of agricultural products in North Kordofan State: current situation and future prospects. (Study report in Arabic and English). Ministry of Finance and Economy, North Kordofan State, pp 144.
- 2007 Abu Habil Study: Current situation, constraints and future prospects. Ministry of Agriculture, Livestock and Irrigation, North Kordofan State.

- 2007 Sand dune stabilization at Namla village - Um Ruwaba locality. Ministry of Agriculture, Animal Wealth and Irrigation. This project is designed and implemented in collaboration with the Forests National Corporation.
- 2007 Land use and investment map for South Kordofan State.
- 2006 Projects for improving forests and animal production in North and South Kordofan State, Green Revolution, Ministry of Agriculture, Animal Wealth and Irrigation, North Kordofan State.
- 2004 Strengthening the Production and Quality Control of Gums and Resins in Africa, Master Plan for Training. Supported by FAO: TCP/RAF/2914, GTFs/RAF/387/ita
- 2004 Causes of the Decline in Production of Gum arabic from Acacia senegal in Western Sudan for the Season 2004, Evaluation Report of Gum Arabic Production in Kordofan. Report Prepared for Warm Seas Company.
- 2005 An impact assessment study of climate change in Kordofan. Survey report presented to Higher Council for Environment, Khartoum, Sudan.

Designed and executed a training courses on gum arabic production and technology for trainees from Mauritania. Organized by Arab Organization for Agricultural Development (1987).

Supervision of Post-Graduate Students

Supervised more than 20 MSc and PhD students and many graduation projects by University students. also contributed as external examiner for a number of post-graduate candidates.

RESEARCH AND TEACHING INTERESTS:

Research:

Silvicultural and management research on dryland tree species; gum/resin producing tree species; agroforestry; tree improvement; sand dune stabilization and ecological and environmental issues.

Teaching:

Part-time lecturer (University of Kordofan): Designed and developed a course on gum arabic in addition to teaching forests silviculture and management since 1990.