



RESEARCHER ID

SCOPUS ID:

ORCID: 0000-0002-6477-8802

Position: Senior Research Scientist (*Seed Science-Forest productivity and Improvement Programme*)

1. PERSONAL INFORMATION

1.1. NAME: Peter Murithi Angaine

1.2. ADDRESS: Rift Valley Eco-region Research Program

Kenya Forestry Research Institute (KEFRI)

P.O. Box 382-20203 Londiani, Kenya

1.3. PHONE: 0745110144 and 0735203355

1.4. EMAIL ADDRESS: pangaine@gmail.com and pangaine@kefri.org

1.5. NATIONALITY: Kenyan

1.6. GENDER: Male

2. QUALIFICATIONS

2.1. Academic Qualifications

2017 to Date: PhD candidate (Seed science), Kenyatta University

2005: Master of Science (MSc.) in Dryland Biodiversity from Addis Ababa University, Ethiopia.

1998: Bachelor of Science (BSc.) in Natural Resources Management from Egerton University

2001: Diploma in business management from Kenya Institute of Management (KIM), Nairobi.

1985: Diploma in Forestry from Kenya Forestry College, Londiani

1980: Advanced level certificate from Nkubu High School, Meru

1978: Ordinary Level certificate from Nkubu High School, Meru

2.2. Key Competencies

Seed science, Forest ecology and silviculture.

2.3. Other Courses

6th September- 4th October 1988: Attended a short course on **tree seed technology** in the then Federal Republic of West Germany sponsored by GTZ project.

2nd August-28th November 1992: Training in Farming Systems Approach (Field surveys using RRA and PRA tools) Organized by KWAP in Kericho.

28th February -10th March 2000: Training on Science Writing, Editing and Oral Presentation, held at KEFRI Headquarters

2002: Certificate in computer operations from Shavine Computer College, Nairobi.

7th -11th November 2005: Training course on “Competitive Grant Systems Proposal Writing” Organised by Research Programme on Sustainable Use of Dryland Biodiversity (RPSUD) held in Merica Hotel, Nakuru

25th June – 27th July 2001: “Certificate on the Management of Tree Seed Programmes” from Danida Forestry Seed Centre, **Copenhagen, Denmark**

26th -30th March 2007: Introduction to ISO 14001:2004, Effective Procedure Writing and EMS Internal Audit Course KEFRI Headquarters, Nairobi

11th-13th May 2009: Training Programme for Foresters/Seed Collection Officers Held at KEFRI H/quarters, Nairobi

11th-13th September 2013: Training on Internal Audit ISO 14001:2004 (Environment Management System) at KEFRI Headquarters, Nairobi, Kenya.

3rd December 2007-25th January 2008: Strategic Leadership Development Programme (SLDP) No. 10/2007 at the Kenya Institute of Administration (KIA), Kabete, Nairobi.

9th-11th June 2010: Assessment and Examination for ISO 14001 Internal Environment Audit at KEFRI Headquarters, Nairobi

23rd -27th January 2012: Science writing course at Kenya Forestry Research Institute (KEFRI) Headquarters, Nairobi, Kenya

13th -17th February 2012: Training in Development of Extension Materials, Held at KEFRI Headquarters, Nairobi

25th may -19th June 2015: Country Focused Training course on Extension, in **Japan**, Organized by JICA.

14th – 19th April 2019: Exposure visit to Commercial Forestry in **South Africa** organized by **GATSBY Africa**

3. EMPLOYMENT HISTORY

July 2019 to Date: Senior Research Officer- Seed Science (under Forest Productivity and Improvement Programme) within Rift Valley Eco-region Research Programme (RVERP), Londiani

Sept. 1998 – July 2019: Research Officer/Manager- Kenya Forestry Seed Centre, Kenya Forestry Research Institute (KEFRI)

July 1986-August 1998: Forester- Kenya Forestry Research Institute (KEFRI)

Nov 1985-Jun 1986: Forester-Forest Department in the Ministry of Environment and Natural Resources (ME&NR) and Kenya agricultural Research Institute (KARI)

May 1981-Nov 1985: Forest Assistant Trainee-Forest Department (ME&NR)

4. ADMINSTRATIVE RESPONSIBILITY

Sep.1998-Oct. 2002 and July 2005-to July 2019: Manager of the **Kenya Forestry Seed centre**, KEFRI Headquarters, Muguga where my main duties and responsibilities were to co-ordinating tree seed collection and distribution; conducting research and organising training in tree seed technology among others.

Feb 1987-Aug.1998: Officer in Charge (OIC) of three KEFRI Regional Seed Collection Centres of **Nyeri, Kakamega and Londiani.**

5. PUBLICATIONS

5.1. Journal papers

Angaine P.M., Onyango A.A., Ndung'u S.M., Inoti S.K., and Owino J.O. (2021): Influence of *Cupressus lusitanica* Mill. cones and seed characterization on germination in Kenya. Journal of Forests. Vol 8, Issue 2, pp 123-130, <https://doi.org/10.18488/journal.101.2021.82.123.130>

Joanne R. Russell, Hedley P.E., Cardle L., Dancey S., Morris J., Booth A., Odee D., Mwaura L., Omondi W., **Angaine P.**, Machua J., Muchugi A., Milne I., Kindt R., Jamnadass R. and Dawson I.K (2014): TropiTree: an NGS-based EST-SSR resource for 24 tropical tree species. PLoS One. <https://doi.org/10.1371/journal.pone.0102502>

Angaine P.M., Onyango A.A. and Owino J.O. (2020): Morphometrics of *Pinus patula* crown and its effect on cone characteristics and seed yield in Kenya. Journal of Horticulture and Forestry. Vol.12 (3), pp. 94-100 <https://doi.org/10.5897/JHF2020.0635>

Onyango A.A., **Angaine P.M** Inoti S.K. and Owino J.O. (2020): Patula pine (*Pinus patula*) cones opening under different treatments for rapid seed extraction in Londiani, Kenya Journal of Horticulture and Forestry Vol.12 (2), pp. 63-69, <https://doi.org/70-83>

Angaine P.M, Ndungú S.M., Onyango A.A., Owino J.O. (In print): Effect of Desiccation and Storage Environment on Longevity of *Ehretia Cymosa* Thonn. Seeds. Journal of Forest, <https://doi.org/10.21203/rs.3.rs-43618/v1>

Owino J.O., **Angaine P.M.**, Onyango A.A., Ojunga S.O. and Otuoma J. (2020): Evaluating variation in seed quality attributes in *Pinus patula* clonal orchards using cone cluster analysis. Vol.12 (2), pp. 63-69 , April 2020 <https://doi.org/70-83>

Angaine P. M. (2005): The biology and ecology of Doum palm (*Hyphaene compressa* H wendl.) A case study of Meru National Park Kenya. (Msc Thesis, Addis Ababa University, Ethiopia) (PDF)197.248.75.118

5.2. Books

Tree Seed Handbook of Kenya (2nd Edition), William Omondi, James Maua, Francis Gachathi Ed.(with contributions from Joseph Ahenda, **Peter Angaine**, Michael Meso, Bernard Kamondo and Daniel Musya)

Mbora A., J.P. Barnekov Lillesø, Schmidt L., **Angaine P.**, Meso M., Omondi W., Ahenda J., Mutua N. A., Orwa C., Jamnadass R. (2009). **Tree Seed Source Re-classification Manual**. World Agroforestry Centre, Nairobi, Kenya. 34 pp. ISBN: 978-92-9059-271-6

Omondi, W., **Angaine, P.**, Meso, M., & Otieno, V. (2009). Tree seed collection, handling and seedling production.

KEFRI (2017): Training Note for Nursery Practitioners and Seedlings Distributors of Improved *Melia volkensii*. Compiled and Edited by Jason Kariuki, **Peter Angaine** and Bernard Kamondo

KEFRI (2016): Training Notes for Distributors of improved *Melia volkensii* Seeds and Seedlings. Compiled and Edited by Jason Kariuki, **Peter Angaine** and Bernard Kamondo

KEFRI (2018): National Tree Seed Production, Certification and Distribution Strategy 2018-2023. KEFRI, Kenya

KEFRI (2016): Revised Tree Seed Catalogue. KEFRI, Nairobi

KEFRI (2010): Revised Tree Seed Catalogue. KEFRI, Nairobi

KEFRI (2008): Kenya Forestry Seed Centre: A source of High Quality Tree Seeds. KEFRI, Nairobi (KFSC Information Brochure compiled by **Angaine P.M.**)

KEFRI (2006): Revised Tree Seed Catalogue. KEFRI, Nairobi

Omondi W., **Angaine P.M.**, Meso M. and Otieno V. (2011): **Tree Seed Collection and Handling: Reference Manual for Extension Agents and Farmers.** KEFRI, Nairobi

Mbora A., Schmidt L., **Angaine P.**, Meso M., Omondi W., Ahenda J., Lillesø. J-P.B, Mwanzia J.M., Mutua N. A., Mutua Wangu R., Jamnadass R. (2009). **Tree Seed Quality Guide.** World Agroforestry Centre, Nairobi, Kenya. 28pp. ISBN: 978-92-9059- 272-3

C.J.Amwata, B. Owuor and P. Angaine (2006): **Doum Palm Guide: On-Farm propagation and Management** (ISFP Technical Guide Series No. 2)

5.3. Technical Notes /Protocols/Guidelines

KEFRI 2006-2021: Tree Seed Information Leaflets (No. 1-58), KEFRI, Nairobi. Compiled by **Angaine P.M.**

KEFRI 2006:Tree seed information leaflets No.1-21; No. 1: *Acacia xanthophloea*, No 2: *Albizia gummifera*, No 3: *Albizia gummifera*, No 3: *Calodendrum capense*, No 4: *Commiphora baluensis*, No. 5 : *Cordia africana*, No 6: *Croton megalocarpus*, No.7: *Cupressus lusitanica*, No 8: *Dovyalis caffra*, No 9: *Eucalyptus grandis*, No 10: *E. saligna*, No 11: *Grevillea robusta*, No 12: *Jacaranda mimmosifolia*, No 13: *Juniperus procera*, No 14: *Markhamia lutea*, No 15: *Milicia exelsa*, No 16: *Newtonia buchananii*, No 17: *Podocarpus falcatus*, No 18: *Polycius kikuyensis*, No 19: *Prunus africana*, No 20: *Spathodea campanulata* and No. 21: *Vitex keniensis*,

KEFRI 2009: Tree Information Leaflets (No. 22-31): No. 22: *Acacia polycantha*, No. 23: *Eucalyptus camaldulensis*, No. 24: *Croton macrostachyus*, No. 25: *Pinus patula*, No. 26: *Maesopsis eminii*, No. 27: *Casuarina equisetifolia*, No. 28: *Azadirachta indica*, No. 29: *Gmerina arborea*, No. 30: *Tectona grandis*, No. 31: *Zanthoxylum gillettii*,

KEFRI 2011: Tree Information Leaflets No. 32-42: No. 32: *Acacia kirkii*, No. 33: *Acacia seyal*, No. 34: *A tortilis*, No. 35: *Acrocarpus fraxinifolia*, No. 36: *Albizia coriaria*, No. 37: *Delonix regia*, No. 38: *Dombeya torrida*, No. 39: *Erythrina abyssinica*, No. 40: *Faidherbia albida*, No. 41: *Senna siamea* and No. 42: *Melia volkensii*,

KEFRI 2016: Tree Information Leaflets (No. 43-52): No. 43: *Schinus molle*, No. 44: *Tamarindus indica*, No. 45: *Acacia mellifera*, No. 46: *Moringa oleifera*, No. 47: *Parkinsonia aculeate*, No. 48:

Pithecellobium dulce, No. 49: *Hakea salicifolia*, No. 50: *Moringa stenopetala*, No. 51: *Balanites aegyptiaca* and No. 52: *Delonix elata*

KEFRI 2021: Tree Information Leaflets (No. 53-58); No. 53: *Bercemia discolour*, No. 54: *Erhetia cymosa*, No. 55: *Trichilia emetica*, No. 56: *Sclerocarya birrea*, No. 57: *Olea capense* and No. 58: *Xymalos monospora*.

KEFRI 2016: A poster entitled ‘Guidelines on Raising Seedlings and Growing of Improved *Melia volkensii*. (For Seed/Seedling Users)’ Compiled and edited by Jason Kariuki, **Peter Angaine** and Bernard Kamondo

Kamondo B, **Angaine P.** Vandenabeele J. (2013): **Nurturing High Quality Tree Seed.** Miti 19. The Tree Business Magazine for Africa. A publication of Better Globe. Issue No. 19 of September. 2013. P 32

6. RESEARCH

6.1. Ongoing research

No.	Title of Project	Role in the project
1.	Effect of different soil mixtures on early growth of <i>Cupressus lusitanica</i> and <i>Grevillea robusta</i> seedlings (PI- Jesse Owino)	A member of the research team from RVERP and Egerton University
2.	Project on the improvement of germination capacity of <i>Cupressus lusitanica</i> seeds	Principle Investigator (PI).
3.	Evaluation of the population structure and factors affecting seed production and quality of <i>Myrianthus holstii</i> Engl. within the Central Highlands Forest Ecosystem	Principle Investigator (PI); PhD Study/project-Kenyatta University

7. CONFERENCES/SEMINARS/WORKSHOPS

7.1. Presentation of Papers at Academic and Professional Conferences

Ndungu S and **Angaine P** (2014): **Predicting storage life and viability of *Melia volkensii* seeds after extraction** (proceedings of the XXIV IUFRO World Congress, 5-11 October 2014, Salt Lake City USA)

Angaine P.M., Onyango A.A. and Owino J.O. (2020): Morphometrics of *Pinus patula* crown and its effect on cone characteristics and seed yield in Kenya. Accepted for presentation in “The XV World Forest Conference 2022 in Seoul, S. Korea”

Angaine P.M., Ndungú S.M., Onyango A.A., Owino J.O. (In print): Effect of Desiccation and Storage Environment on Longevity of *Ehretia Cymosa* Thonn. Seeds. Accepted for presentation in “The XV World Forest Conference 2022 in Seoul, S. Korea”

7.2. Participation in Workshops/Conferences

Kaudia A.A and **Angaine P.** (2002): Tree Seed Production and Quality Control. The Seed Industry in Crossroads: Stakeholders’ Workshop. Hotel Kunste, Nakuru 1st-3rd July 2002

Peter Angaine (2001): Tree seed procurement and distribution in Kenya. A paper presented in the 4th workshop of African Tree Seed Centres and National Programmes. 11th to 16th March 2001 **Ouagadougou, Burkina Faso**

Peter Angaine (2001): Seed supply system through Kenya Forestry Seed Center (KFSC). Presented in the International workshop on Tree Seed Supply to Small Scale Farmers in the Tropics. June 4th – 6th 2001. ICRAF Headquarters, Nairobi

8. PROFESSIONAL ENGAGEMENT

8.1. Training

Bernard Kamondo, Nelly C. Oduor, **Peter M. Angaine** and Clement Ngariareng (2015): **Report on the JICA Extension Course Undertaken in Japan** (20th May to 21st June 2015)

9. LOCAL, REGIONAL & INTERNATIONAL APPOINTMENTS

9.1. Local Appointments

20th April 2010: Appointment to the membership of the KEFRI ISO EMS core team

2nd February 2011: Appointment to the committee to develop short term training courses for KEFRI

17th October 2012: Appointment as a member of the seed and packing committee of KEFRI

10.AWARDS AND RECOGNITION

15th December 2011: Given letters of **Commendation by the KEFRI Board of Management** for;

- Excellent service in EMS ISO 14001-2004 certification and
- Excellent service in Exhibition at the Nairobi International Trade Fair

11.CONTRIBUTION TO KEFRIs ADVANCEMENT

Awarded a **Certificate of EXCELLENCE** by the board of management for my contribution towards KEFRIs achievement of “Excellent” score in the performance contract of 2014/15 financial year. (Tree seed production and distribution)

For almost 20 years (from October 1998 to July 2019) I was at the helm of the **Kenya Forestry Seed Centre** as the **Manager** where I was charged with the responsibilities of coordinating tree seed production and distribution to Forest Department/Kenya Forest Service (KFS) and other clients. During this period KEFRI consistently met the demand for seed from FD/KFS for their national wide annual planting programme.

During my tenure as the Manager of KFSC we recruited and trained 36 young seed collectors to boost seed production and succeed the aging staff who were about to retire, thus ensuring KEFRI continued leadership in Quality tree seed production

12. MEMBERSHIP TO PROFESSIONAL BODIES

Member of the Forest society of Kenya (FSK)

13. REFEREES

1. **Dr. Joram Kagombe**

Deputy Director,

Socioeconomic, Policy and Governance Programme

Kenya Forestry Research Institute (KEFRI)

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2. **Dr. Shadrack Kinyua Inoti**

Senior Lecturer,

Department of Natural Resources Management,

Faculty of Environment and Resources Development,

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