



NATURAL LIVESTOCK FARMING FOUNDATION

Annual Report 2022



Thanks to the continued input and enthusiasm of the whole international network, the NLF year 2022 turned out to be one of growing recognition of the impact of our strategy. The continuous lobby and advocacy has resulted in two of the four countries (India and Ethiopia) are now including the NLF concept and Ethno Veterinary Practices (EVP) into their agricultural policies. And two of the four countries (India and the Netherlands) are in the process of including it into formal veterinary education.

In this annual report we present an overview our activities, developments and achievements over 2022, with the following chapters:

1. Overview NLF country organization achievements (p. 3-5)
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1. Overview NLF country organization achievements



NLF India-GLOHMSIWA/TDU: government acceptance of approach

India is the largest dairy producer in the world (21% of global dairy production) on basis of 98% small scale dairy farmers with 2-5 cows, in majority women. Since 1998 NLF India, comprising of the Trans Disciplinary University (TDU) and GLOHMSIWA, have documented, assessed and promoted herbal formulations and Ethno Veterinary Practices (EVP) for the most important cattle diseases, including mastitis, calf diarrhea, repeat breeding and Foot & Mouth Disease (FMD). Together with National Dairy Development Board (NDDB) over 1100 veterinarians and 10.000 animal health personnel was trained in over 1000 Dairy Cooperative Societies in 9 states.



In 2022 special impact was achieved through the successful herbal treatment during a massive outbreak of Lumpy Skin Disease, a viral infection transmitted by biting insects without effective treatment from conventional veterinary medicine.

Other major achievements of 2022 include:

- Large scale proof of with National Dairy Development Board (NDDB): over 800.000 cases documented, average clinical recovery over 80% for 24 diseases, 72% cost reduction for farmers, 88% reduction antibiotic residues in milk
- Ministry of Agriculture strategy for reducing antibiotic use is now mainly on basis of herbs
- EVP program are to be included into the mainstream veterinary curriculum
- TDU is offering an EVP / One Health diploma course for veterinarians together with NDDB
- TDU has started commercialization of three ready-made herbal products within India: (1) mastitis, (2) immunity booster and (3) tick-and lice control
- On December 10, a one day conference on Pashtu Ayurveda / EVP was organized during the World Ayurveda Congress in Goa, with over 300 attendants
- Increased collaboration with Indian Veterinary Council (IVC) and Karnataka government
- Seven publications on EVP in 2022



NLF Ethiopia-ESAP – growing recognition:

The NLF activities are headed by the Ethiopian Society of Animal Production (ESAP), a society of over 500 livestock professionals. Between 2018 and 2020 ESAP implemented the pilot under the umbrella of the Applied Research Fund (ARF) of the Dutch government. Experts from NLF India provided a training course on the use of medicinal plants while organizations from the Netherlands guided training on laboratory skills, calf care, hoof trimming and housing. In two years, the approach has resulted 60% reduction of calf mortality, 50% increase in milk production and 33% increase in farm income, with cattle health costs reduced by 20%. Moreover, milk quality was improved: with 8% less antibiotic residues, reduced presence of microbes and improved content. Moreover, the approach boosted the position of women within the community.

In 2022 the major achievements in Ethiopia include:

- Government gradually adopting the NLF 5-layer approach and especially Ethno Veterinary Practices. This will be included into formal dairy strategy of Ministry of Agriculture for the 5 coming years
- Five universities developing a data base with papers on Ethno Veterinary Practices: Boreana University, Gondar university, Haramaya University, Jinka University, Jigjika University
- Growing international collaboration and joint projects, especially with Veterinaries without Borders: VSF Switzerland, VSF Germany and VSF France (AVSF).
- Papers on NLF and EVP presented at 2022 ESAP conference (Prof. Tafesse, Katrien vantHooft)
- Disappointment of 2022 was related to the SNV-BRIDGE program: though basic agreements were made and a proposal discussed, a joint ESAP/NLF/SNV project was declined



NLF Uganda-Lake Mburo Farmers Cooperative Society – Flourishing farmers’ cooperative

In Uganda NLF is operating in two small farmer-led projects in the ‘Cattle Corridor’. In the dry areas of South-Central Uganda the focus is on selective breeding of Ankole Longhorn indigenous cattle and natural fencing of grazing areas. The Lake Mburo Farmers Cooperative Society (LMFCS) in South West Uganda promotes a range of practical actions. The establishment of milk cooler has attracted many farmers to join cooperative, and resulted in additional yoghurt making by women, and sale by young community members.

Major achievements in 2022 include:

- Fast growing numbers and enthusiasm of cooperative membership: from 45 to 176
- Growing community level yoghurt making (from 200 to 600 liters per week) by women & transport by two marketeers (youngsters) to urban areas. Main limitation is transport.
- Recently acquired a pasteurization equipment, with capacity of 50 liters per day.
- Improvement of installation, with water harvesting tank (20.000 lts) and concrete floor
- Income diversification activities: bee keeping and indigenous tree species (10.000 Macamia)
- Breeding project with Vleckvieh insemination, in combination with National Genetic Resource Centre
- Crude salt provided for cattle of members.
- An initiative on maintenance of Ankole breed, through re-stocking in the central cattle corridor, and construction of live fence material was undertaken.





NLF Netherlands: gradual influencing of veterinary practice and education

NLF in the Netherlands is an independent entity registered as Platform Natuurlijke Veehouderij-PNV), collaborating with Veterinary Knowledge Centre (VKON) and Wageningen Food Safety Research. Antibiotic use in Dutch dairy farming for mastitis control used to be high, especially dry cow treatment. Since 2014 – forced by government legislation – antibiotic use in the dairy sector was reduced 70%, including replacement of antibiotics for dry cow treatment with herbal products. Moreover, farmers have started to use herbs in the grassland and cattle feed. This posed a challenge due to lack of knowledge amongst farmers and veterinarians about this.

NLF strategy is being adapted to large-scale dairy farming. Over the past years more than 400 farmers and 50 veterinarians were trained on herbs in grasslands and safe use of ready-made herbal products. In 2022 Dutch farmers were under major stress due to environmental legislation of the EU, due to growing environmental degradation. The intensive dairy/livestock system is no longer complying with EU regulations. Carbon farming is an opportunity that is coming up.

Major achievements of NLF Netherlands in 2022 include:

- Training veterinarians and farmers on herbs in grassland continues
- In 2022 NLF Netherlands is the networking partner in Kennis op Maat (Adapted Knowledge) program on Herbal Products, coordinated by Wageningen University. Project phase 2 has now been approved: spreading knowledge on safety of herbal products in veterinary education & agricultural schools
- Collaboration with commercial partners on safety of herbal products continues
- Special NLF course within veterinary education is being set up



2. Growing partnerships and fundraising opportunities for upscaling

NLF holds a prominent position within remarkable growth of EVP networks worldwide. Funding at country level for national or local projects is going very well in the partner countries. Meanwhile, funding sources for international coordination activities and upscaling remains behind. The continued financial support of the Ineke Fund has ended in 2022. Meanwhile the improved visibility combined with proof of concept gave given rise to increased interest of new organizations to link up and seek collaboration, providing possibilities for joint funding:

- [AVSF \(VSF France\)](#), [VSF Switzerland](#) and [VSF Germany](#) – collaboration agreed upon for Ethiopia. Can be amplified to other regions, including West Africa
- [International Dairy Federation \(IDF-FIL\)](#) has shown interest after the IDF conference at National Dairy Development Board in India. Initial collaboration through joint webinars (Herbal mastitis control, Nov. 2022)
- [League for Pastoral Peoples](#) – Collaboration with special focus on pastoral peoples.
- [Access Agriculture](#) - Continued collaboration
- [Global Innovation Fund](#) – Funding request sent in for a 5 year program

- **Project for herbal tick control:** linkage with two Rotary groups in Netherlands through NLF contacts, possibilities for small scale funding. Also Absyrtus Senior (retired veterinarians)
- Renewed linkages with growing EVP networks: especially in Latin America and South Africa

3. Improved visibility through PR, webinars and publications

The year 2022 proved to be a breakthrough moment for Ethno Veterinary Practices. Importantly, on 13 Sept 2022 Prof. Punniamurthy presented EVP at the World Dairy Summit of the International Dairy Federation (IDF-FIL) in Delhi, organized by the Indian IDF member organization National Dairy Development Board (NDDB). This opened the ideas not only of IDF but also of FAO director Animal Health and several other key players in livestock development.

- **International webinars and courses:**
 - o 18 January *Natural Ways of Dairy Calf Raising*
 - o 25 July: NLF course for Hohenheim international livestock students
 - o 6 December: *Herbs for mastitis control* at NLF-IDF webinar Herbs for Mastitis Control, with contributions from Jorge Pinto Ferreira (FAO), M.N.B. Nair, A.V. Harikumar (NDDB), Maria Groot and Katrien van't Hooft
- **Presentations at Conferences and e-meetings:**
 - o 8 March: PP on NLF at Netherlands Phytotherapy Society (NVF)
 - o 5 April: PP on NLF at Indian Centre for Agricultural Research (ICAR), India
 - o 11 May: PP on NLF for International Student One Health Association (ISOHA)
 - o 10 June: Workshop on NLF at Food Difference congress NL (live);
 - o 21 June: Presentation at NLF Netherlands conference (live);
 - o 22 August: PP presentation on Dutch farmers at Asia GASL meeting
 - o 16 September: NLF presentation at ESAP annual conference 2022
 - o 18 Oct. at Wageningen University with Maria;
 - o 19 October: Trasiber conference, Univ. Cordoba and Univ. Chiapas;
 - o 10 Dec. NLF at Livestock day at World Ayurveda Congress, Goa India
- **E-list** for sharing info (280 members) combined with whats-app groups for internal cohesion
- **Website:** 8 news items on NLF website - new NLF website about to be launched
- **Social media and newsletter:** to be further developed

2022 Publications NLF general:

- Katrien van't Hooft, M.N.B. Nair, N. Punniamurthy, Maria Groot, G. Gebru. **Natural Livestock Farming – Strategic International Collaboration to Reduce the Use of Antibiotics in Dairy Farming.** *Poster at international conference Global Association for Sustainable Livestock (GASL) Dublin, 15 September 2022*
- Katrien van't Hooft M.N.B. Nair, N. Punniamurthy **Effective reduction of antibiotic use in dairy farming through ethnovet medicine as part of an integrated livestock health approach'** In: Down to Earth, Special issue for World Antimicrobial Awareness Week, November 2022.
- [Effective reduction of antibiotic use in dairy farming through ethnovet medicine as part of an integrated livestock health approach'](#) in Blog of PEAH (Policies for Equitable Access to Health) (organized by Daniele Dionisio (member of the European Parliament Working Group on Innovation, Access to Medicines and Poverty-Related Diseases

2022 Articles on Ethno Veterinary Practices

From NLF India/National Dairy Development Board (NDDB)

- Dutta et al, [Case reports on management of Lumpy Skin Disease like conditions with ethno-veterinary practices](#) In: The Pharma Innovation Journal 2022; SP-11(1): 236-239

- National Dairy Development Board (NDDB): [Ethnoveterinary formulations for important ailments in bovines](#). *Updated brochure on EVM 2022*
- [Dutta et al. Management of repeat breeding in bovine by herbal combination](#) In: Journal of Entomology and Zoology Studies 2022; 10(1): 295-297
- M.N.B.Nair: [Ethnovet can be used both for preventives and curatives Interview CSE special issue for World Antimicrobial Awareness Week, November 2022](#)
- Nair M.N,B., Punniamurthy N., Kumar S.K. [Reduction of antibiotic residue in milk through the use of cost-effective ethno-veterinary practices for Cattle health](#) In: The Pharma Innovation Journal 2022; SP 11(7): 181-189

From other sources

- Daniel Jesuwenu Ajose et al, 2022 [Combating Bovine Mastitis in the Dairy Sector in an Era of Anti-Microbial Resistance: Ethno Veterinary Medicine as a Viable Alternative Approach](#) In: Frontiers in Veterinary Science, Review published 4 April 2022
- Deepak Bhati et al: [Easy to Switch: Ethno Veterinary Medicine as a low-cost alternative to reduce antibiotic use in the Indian dairy sector](#). In: *Centre for Science and Environment (CSE), November 2022*
- Jeffrey Bentley [Kicking the antibiotic habit](#) Blog in Access Agriculture

4. Further professionalization of NLF

As an international organization registered as a charity within the Netherlands, we continued to improve the coordination and functioning of the board.

Current members of NLF Administrative Board are:

- President: Dr Unnikrishnan Payyappalli (PhD) India
- Treasurer: Drs. Arjen Dijkstra, Netherlands
- Secretary: Drs. Hester Foppen, Netherlands
- Member: Dr. Getachew Gebru (PhD) Ethiopia

Current members of the NLF Executive Board are:

- Executive Director: Dr. Katrien van't Hooft, Netherlands
- Head NLF in India: Dr.M.N.B.Nair
- Head NLF Ethiopia: Dr Daniel Temesgen
- Head NLF in Uganda: Mrs Elizabeth Katushabe
- Head NLF in Netherlands: Mrs Janna van der Meer

Meetings (formal, informal) of the board were done in a regular way and well documented.

Formal meetings were held:

- 14 april: Executive Board meeting
- 25 June: Executive & Administrative joint board meeting
- 28 October: advisory meeting with admin board

5. PhD and MSc student involvement

Our efforts to include more PhD and MSc students still have limited effect. There is much student interest in all countries, including from student organizations, but very limited funds to support student research work. This is to be changed in 2023.

Some more info:

- Successful Dutch veterinary Student research (2021):
 - Natural Remedies to control internal parasite infection in ruminants: [PP](#) and [Report](#)
 - Natural Remedies to control external parasites in ruminants: [PP](#) and [Report](#)
- Possibility of MSc of students from department of Animal Production Systems at Wageningen University & Research

Conclusion – we hold a niche position within the international AMR strategy:

All in all, as NLF we have gained a niche position within Ethno Veterinary Practices and livestock development in general. This is especially due to the successful experiences in bottom-up work with farmers and veterinarians in India and Ethiopia. Many international organizations working on dairy development and milk quality improvement focus on top-down food control mechanisms. There is growing awareness of the limitations of this approach, therefore opening up for our bottom-up and integrated strategy at the level of antibiotic use prevention. This opens up further partnerships with international organizations.

Financial Overview 2022

Balance sheet as at Decembre 31th 2022		Decembre 31th 2022	Decembre 31th 2021
Assets			
Fixed assets			
Current assets			
Cash and Cash equivalent	€	28.163	€ 19.754
Total	€	28.163	€ 19.754
Liabilities			
Reserves and liabilities	€	4.793	
Reserve	€	1.100	
	€	22.270	€ 19.754
Total	€	28.163	€ 19.754
Statement of income and expenditures		2022	
Income			
Donations	€	30.000	
Projects	€	250	
Funding	€	1.958	
Total	€	32.208	
Expenditures			
Expenditures on objectives	€	-	
Staff	€	25.728	
Other expenditures	€	2.864	
Total	€	28.592	
Result	€	3.616	