



# ANIMAL NUTRITION IN FAO AND SUSTAINABLE DEVELOPMENT GOALS



ON 1 JANUARY 2016, THE 17 SUSTAINABLE DEVELOPMENT GOALS (SDGS) OF THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT — ADOPTED BY WORLD LEADERS IN SEPTEMBER 2015 AT A HISTORIC UN SUMMIT — OFFICIALLY CAME INTO FORCE. COUNTRIES HAVE ADOPTED A NEW SUSTAINABLE DEVELOPMENT AGENDA, BUILT ON MILLENNIUM DEVELOPMENT GOALS, THAT PRESENTS AN UNPRECEDENTED OPPORTUNITY TO BRING THE COUNTRIES AND CITIZENS OF THE WORLD TOGETHER TO EMBARK ON A NEW PATH TO IMPROVE THE LIVES OF PEOPLE EVERYWHERE. THE TARGET YEAR IS 2030 FOR ACHIEVING THESE 17 GOALS. “LEAVE NO ONE BEHIND” IS THE CENTRAL DICTUM OF THE SDGS. THESE GOALS REPRESENT THE ASPIRATIONS OF THE GLOBAL COMMUNITY IN ADDRESSING A WIDE RANGE OF GLOBAL ISSUES, INCLUDING ERADICATION OF HUNGER AND POVERTY, HEALTH, CLIMATE CHANGE, ECONOMIC DEVELOPMENT, HUMAN RIGHTS AND GENDER EQUALITY.

Currently, there has been a surge in the interest from Member States to use climate-smart and resource-efficient animal feeding strategies. The main drivers for this are the high cost of feeds (up to 70% of the cost of production) and the feed production being high resource demanding in terms of land, water and energy. Furthermore, almost all the sub-sectors and services of the livestock sector get influenced by the manner in which feed is produced and fed. The Animal Nutrition programme of the FAO focuses on assisting Member States to:

- a) efficiently utilize locally available feed resources;
- b) extend feed resource base by identifying novel and locally adapted, lesser-known, under-utilized feed resources, with a focus on decreasing food-feed-fuel competition;

- c) generate sound data on availability and use of feed resources;
- d) convert feed loss and waste into animal feed;
- e) strengthen laboratory capacity to generate sound data on feed quality and safety parameters; and
- f) strengthen feed regulations and implementation mechanisms.

This programme is fully aligned with the spirit of SDGs and committed to contributing towards their achievement in partnership with Member States. Animal Nutrition includes how feed resources are produced, feed is prepared on farm or in feed industry, and feed is fed to meet the nutrient requirements of animals. Most activities in the area of Animal Nutrition contribute to realization of SDGs.



# ANIMAL NUTRITION IN FAO AND SUSTAINABLE DEVELOPMENT GOALS

## GOAL 1 END POVERTY IN ALL ITS FORMS EVERYWHERE

- Enhancing animal productivity (improving product yield, reproductive efficiency, animal health, animal welfare and natural resource use), increasing

income and supporting livelihoods of poor rural producers and small-scale farmers through providing guidance on increasing feed use efficiency by rational use of feeds and feeding regimes – using the balanced/precision feeding concept and tools.

## GOAL 2 END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE

- Improving livestock productivity, food security and human nutrition through enhancing supply of nutritious animal products by using smart feeding strategies;
- Generating national feed inventories, national and regional feed balances, characterizing feeding systems, enabling policy makers, science managers and

feed industries to plan and develop sustainable livestock sector;

- Promoting feeds and feeding strategies that decrease enteric methane and nitrogen excretion in manure while increasing livestock productivity and conserving biodiversity – implementing the concept of sustainable animal diets that promotes three-P dimensions (planet, people and profit) coupled to ethics of raising livestock (promoting animal welfare and reducing food-feed competition; the latter also helps increasing food security).

## GOAL 3 ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

- Increasing availability of safe food by providing safe feed, for example by generating sound data on feed quality and safety parameters including aflatoxins, heavy metals and pesticides through organization of proficiency tests and e-learning courses on risk assessment, quality control in feed

analysis labs, feed analysis laboratory accreditation; and by strengthening feed regulation and their implementation;

- Providing guidance to reduce risks to animals as well as humans by the presence of physical, chemical and biological contaminants in feeds that produce adverse effects;
- Providing guidance on feed preparation to obtain animal products containing health-promoting bioactive compounds and with higher shelf-life.

## GOAL 4 ENSURE INCLUSIVE AND QUALITY EDUCATION FOR ALL AND PROMOTE LIFELONG LEARNING

- Promoting good research and education by strengthening the capacity of teaching staff and feed analysis laboratories to generate good quality research data on feed composition and nutritional quality;
- Identifying sound and new methodologies and assisting in their introduction in feed analysis laboratories;
- Assisting feed analysis labs to use proper equipment and proper methods of analysis;
- Providing training to teaching and research staff on quality control systems for feed analysis and risk assessment

through moderated and self-learning animal nutrition modules;

- Increasing accessibility of feed-related manuals and e-learning modules in Russian language to researchers, teaching staff and extension workers in countries in Central Asian and Caucasus region and in French language for many African countries, which generally are deprived of recent information;
- Providing pro-poor and gender-sensitive education, training and extension services on feed preparation and use for poor rural households and producers, in a participative way, through combining formal science and technology with non-formal local and traditional knowledge.

## GOAL 5 ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

- Promoting programmes that involve women in implementation of animal nutritional strategies for example ration balancing approach;
- Promoting application of feeding strategies that save time for animal feeding (in developing countries, largely

women take care of livestock including feeding), examples being use of densified feed blocks, total mixed ration and by enhancing linkages with input (feed) markets such as already prepared silages, blocks, urea-treated straw and other feed resources. Saved time empowers women by using that time for example on children nutrition and education needs and on self-development activities.

## GOAL 6 ENSURE ACCESS TO WATER AND SANITATION FOR ALL

- Promoting the use of water-efficient forages and feeding strategies such as

use of thornless cactus, atriplex, tree fodders and browses, crop residues and other agro-industrial by-products, among others as animal feed.

## GOAL 7 ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL

- Conducting analysis to better understand biomass use, for example crop residues for bioenergy and/or animal feeding; and vegetable and fruit wastes for generation of value added products including biogas, animal feed

and bioactive components;

- Promoting the use of biofuel co-products as livestock feed;
- Promoting the use of fuel-efficient feed manufacturing and solar-powered dryers for drying feed resources such as vegetable and fruit wastes and food-processing by-products, which leads to higher availability of energy in energy-deprived developing countries.

## GOAL 8 PROMOTE INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, EMPLOYMENT AND DECENT WORK FOR ALL

- Helping organizations to develop business models on the use of animal nutrition technologies such as urea treatment of straws, urea molasses blocks, mineral blocks, fodder production and silage formation, among others;
- Promoting the balanced feeding at farmers' doorsteps through extension

workers, which generates employment and help promote economic growth;

- Increasing opportunities for resourcing inputs in the form of appropriate feeds;
- Opening avenues for using novel feeds, which generally generate employment in the feed production and processing sectors, and promote economic growth;
- Promoting entrepreneurship and innovation in feed manufacturing, and ensuring opportunities for feed-related off-farm job creation.

## GOAL 9 BUILD RESILIENT INFRASTRUCTURE, PROMOTE SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION

- Identifying novel feed resources and innovative and smart feeding strategies and opening avenues for their industrial use (feed manufacturing);

- Furthering entrepreneurship and innovation in sustainable feed manufacturing through dissemination and implementation of FAO's sustainable animal diet concept;
- Promoting the use of fuel-efficient motors and processes in feed industry;
- Promoting the use of solar powered dryers for drying feed resources.

## GOAL 10 REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES

- Enhancing capability and capacity of nations to generate good and sound data on feed quality and safety as well as increasing feed resource base – imperative for promoting trade in feed

resources and animal products and ensuring provision of safe feed and animal products in local markets, which enhances nutritional security of local communities. combining formal science and technology with non-formal local and traditional knowledge.

## GOAL 11 MAKE CITIES INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

- Providing opportunities to convert 'waste to worth' by using vegetable

wastes from city wholesale markets as animal feed, which decreases their decomposition, smell and landfills and make cities clean, hygienic and lesser environment polluting.

## GOAL 12 ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

- Enhancing livestock productivity

through sustainable use of feed resources at farm level and sustainable production of feed at manufacturing/ industry level.

## GOAL 13 TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

- Characterizing smallholder dairy production systems using life cycle analysis (LCA) and applying greenhouse gas mitigation approaches;
- Promoting practices for rangeland/ grassland improvement and use;
- Highlighting the importance of local

feed resources adapted to harsh climate and soil conditions, and furthering their efficient use by following the concept of ration balancing including the provision of minerals and vitamins;

- Identifying novel feed resources such as insect meals and seaweeds that fit into the production systems and promoting their use to lower environmental 'hoofprint'.

## GOAL 14 CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES

- Promoting the sustainable use of seaweeds, duckweed and other aquatic plants as livestock feed.

## GOAL 15 SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, HALT AND REVERSE LAND DEGRADATION, STEM BIODIVERSITY LOSSES

- Promoting the use of plants/forages that sequester carbon and reclaim

degraded lands, some examples being thornless cactus, tree fodder, browses, and legumes;

- Identifying and promoting the use of unconventional, locally adapted feed resources, which help to enhance biodiversity.

## GOAL 16 PROMOTE JUST, PEACEFUL AND INCLUSIVE SOCIETIES

- Enhancing food security through increasing feed security and safety,

which contributes to prevention of food insecurity linked unrests;

- Promoting sustainable use of local feed resources and ensuring its accessibility for poor and marginalized farmers.

## GOAL 17 REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

- Strengthening participation of and collaboration among stakeholders in various feed and feeding related platforms such as Asia-Pacific Animal Feed Network, Global Feed Resource Information System (Feedipedia),

Asian-Australasian Dairy Goat Network, Sustainable Dairy Asia Platform, among others;

- Assisting countries to conduct national feed assessment and characterize feeding system under the umbrella of Animal Production and Health Commission for Asia and the Pacific (APHCA).

