

## Creating an International Forage and Grasslands Curriculum

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### Introduction

Grasslands cover nearly 2/3 of the land masses of the world and make up 1/4 of the earth's surface. Although various regions of the world have different names for their grasslands, common management principles govern maintaining and improving these lands for the food production and environmental services they provide. There is much talk today about “finding the balance between environmental protection and economic development” but there is little evidence of knowledge about grassland ecosystems being translated into effectively implemented policies designed to restore degraded grasslands. In contrast, there are many examples of the tragic consequences of economic development rather than biological capacity driving decision-making. Historically, people were connected with the land and understood the soil, plant, animal, human “circle of life.” This understanding led to appropriate management. Today, the vast majority of the developed world has little understanding of these natural processes and increasing percentages of the developing world live in cities and are disconnected from the natural ecosystems that service them. Even those few studying agricultural sciences have little appreciation for the scope and diversity of grasslands present in the world. Far fewer have an understanding of the importance of grasslands management principles and needed supporting policies. Thus, there is a need for teaching materials that can be used worldwide to convey the importance and proper management of grasslands and forage-livestock systems.

The International Forage and Grasslands Curriculum project will develop and provide online access to instructional materials specifically designed for college-level introductory classes. Materials will be created by specialists in the areas of forage crops, agroecology, curriculum and instructional design, communication, graphic arts, and information science. Objectives are to: (1) develop greater awareness and a more accurate understanding of grassland forages and livestock systems and their economic, social, and environmental importance; (2) provide specific knowledge of forage topics presented by international forage experts through a variety of teaching strategies and activities; (3) provide opportunities for learners to enhance their

skills in reading, writing, and calculating using forage concepts; and (4) provide avenues for learners to apply their skills to real-world forage situations.

The overall goals of the curriculum are to help learners develop proficiency in fundamental concepts of forage production systems, become knowledgeable in forage-related topics, gain experience in integrating concepts of plants, soils, and animals into a forage/livestock production system, and appreciate the past, present, and future impact of forages on society.

### Methods

The International Forage and Grasslands Curriculum (IF&GC) will be developed by individuals having expertise in: (1) forages and grasslands, (2) instructional design, (3) nutrition and environmental health, and (4) graphic design and journalistic editing. All instructional segments will be reviewed by the development team, working with regional and topical experts. Regional advisors will provide review of the topic materials to ensure that significant regional differences are considered and included. Topical experts will develop the initial drafts of each module according to the instructional design template provided by instructional design specialists.

Inputs, activities, outputs, and outcomes will be defined using a Logical Framework Analysis approach (as described in the World Bank's publication “The LogFrame Handbook: Logical Framework Approach to Project Cycle Management”). This approach defines the overall results (outcomes) desired and then works backwards causally to list products (outputs), activities, and inputs required. This approach also ensures that all participants have a clear understanding of the higher level objectives of developing these instructional materials and to clarify the evaluation process through objectively verifiable indicators.

The IF&GC project implementation team (forage and grassland instructors, instructional designers, and graphics arts and journalist specialists), as representatives of all forage and grassland instructors globally, is the project point of view. The goal set by the project implementation team is that through the use of these instructional materials there will be improved land management, a better nourished populace, and improved health and well-being of those in-

structured or otherwise affected by this project.

## Results

The International Forage & Grasslands Curriculum will provide both instructor and student materials. Content under the instructor materials will help instructors teach forage and grasslands classes using a variety of teaching methods. This content will include PowerPoint slide decks for each topic, suggested teaching methods, class activities, images, section review questions, sample quiz/exam questions, laboratory activity ideas, links to other forage related websites, and reference lists. Student materials will include materials that reinforce and illustrate key concepts and enable students to review and test their knowledge level on each topic.

To provide a comprehensive Forage & Grasslands Curriculum, 22 modules are planned. Topics will include: Introduction to Forages, Grasslands of the World, Important Forages in the World, Grasses, Legumes, Plant Identification, Forage Selection, Establishment, Weeds, Management/Physiology, Fertilization, Biological Nitrogen Fixation, Grazing, Mechanically Harvested Forages, Irrigation, Quality and Testing, Breeding, Forage-livestock Systems, Miscellaneous Forages, Economics of Forages, Environmental Issues of Forages, and Grass-based Health. Each topic will provide an Overview, Pre-Test, Instructional Objectives, Summary, Section Review Questions, Exam, Images, and References. Student materials will

include practice exams, a reading test, math review, and a writing evaluation.

## Conclusions

The Forage & Grasslands Curriculum is being designed to develop a standardized curriculum that covers the essential components of forage and grassland management through the participation of international experts. The curriculum will consist of 22 major topics areas. Each topic will have both instructor and student materials. The IF&GC will serve as a comprehensive information source for forage-related classes or as supplementary teaching materials for student and faculty in the area of Forage Production and Management. Its use will lead to greater awareness and a more accurate understanding of grassland forages and livestock systems and subsequent improved land management and economic and nutritional well-being of learners and those they affect.

## References

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