

Institutions, structures and topics of grassland research in Germany – From science to practice

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Introduction In Germany, grassland covers some 30% of the agriculturally used land. It forms the basis of forage production in dairy and beef cattle husbandry as well as sheep and horse feeding. The intensification of grassland farming during the last fifty years was made possible through extended basic and applied research in all fields of grassland management. This included the improvement of forage species and varieties by plant breeding, the adaptation of botanical knowledge for the control of the botanical composition of permanent grass swards, the application of regular fertilisation, the improvement of the grazing management, the increased frequency of utilisation or herbage conservation by ensiling. In addition to the general improvement of forage production, the refinement of production measures in animal husbandry has led to a marked increase of efficiency in dairy and beef cattle farming. Production-orientated research was well funded until the late 1980's. Since then, the awareness of adverse side effects of the intensification of grassland farming, such as the loss of biodiversity, the pollution of the environment mainly by excess nitrogen and phosphorus, and the emission of greenhouse gases has grown. In addition, with the reform of the European Union Agricultural Policy in 1992, the rental costs for grassland decreased as did the stocking rates. On marginal sites, grassland is now at risk of being abandoned from agricultural use. Thus, increasing forage production and refining production measures have lost priority in grassland research and multiple function grasslands have become the main target of research.

Organization of scientific and applied grassland research Grassland research in Germany is performed by Universities, State Institutes, and institutions of the countries within the federal state. Basic research is mainly located in the Universities and the state institutions, whereas applied science is performed by institutions of the federal countries. The latter are also responsible for the support of the extension services. The transfer of research results from science to practice is generally achieved by publication in scientific journals, publication in popular series for the extension services and the farming community, and by congresses with participants from science and practice.

Grassland societies The Arbeitsgemeinschaft Grünland und Futterbau (AGGF, 'German Grassland Society'), is the main scientific association for grassland research in Germany. It was founded in 1950. Later, the AGGF joined the Gesellschaft für Pflanzenbauwissenschaften (GPW, German Society of Agronomy) and became a working group within the GWP. It is the general aim of the AGGF to enhance the scientific progress in grassland management and to represent this field to neighbouring scientific disciplines, to national and international politics and to society as a whole. It also represents German grassland research in international scientific associations. At present, the AGGF has some 250 members, half of them being from science and the other from applied science and practice. There is a regular annual meeting every year with 100 to 150 participants. These meetings have a general topic which is chosen according for its relevance to actual grassland farming. In addition to this annual conference, there is a session for grassland research within the annual conference of the GPW. Here, mainly scientists from basic research meet. In 1991, the Deutsche Grünlandverband (DGV) was founded. It is the aim of the DGV to support farmers, nature conservation groups and policy makers in their efforts to maintain the agronomic and ecological performances of grassland. The focus is on applied research and on the application and transfer of recent results of scientific research into the practice of grassland management. The DGV has some 1200 members, mainly farmers, and it organizes a regular meeting every year.

Recent challenges for grassland research The change in priority from forage production to multi-function aspects of grassland management in recent years has been accompanied by a lowering of the position of grassland research among the scientific community. Basic disciplines in biology and ecology have successfully established strong research in the field of grassland ecology and nature conservation, e.g. on the relationship of biodiversity with productivity and ecosystem functioning or on mega-herbivore grazing for landscape management. Agriculturally-orientated grassland research is challenged to develop production systems that consider and utilise recent findings on the ecology of grassland for efficient animal husbandry. Unless basic findings are integrated into efficient and profitable farming systems, their adoption in practice will remain poor. Therefore, grassland research in Germany needs to be linked to neighbouring scientific disciplines more efficiently. It should further develop its particular strength to bridge science and practice by a systems approach.