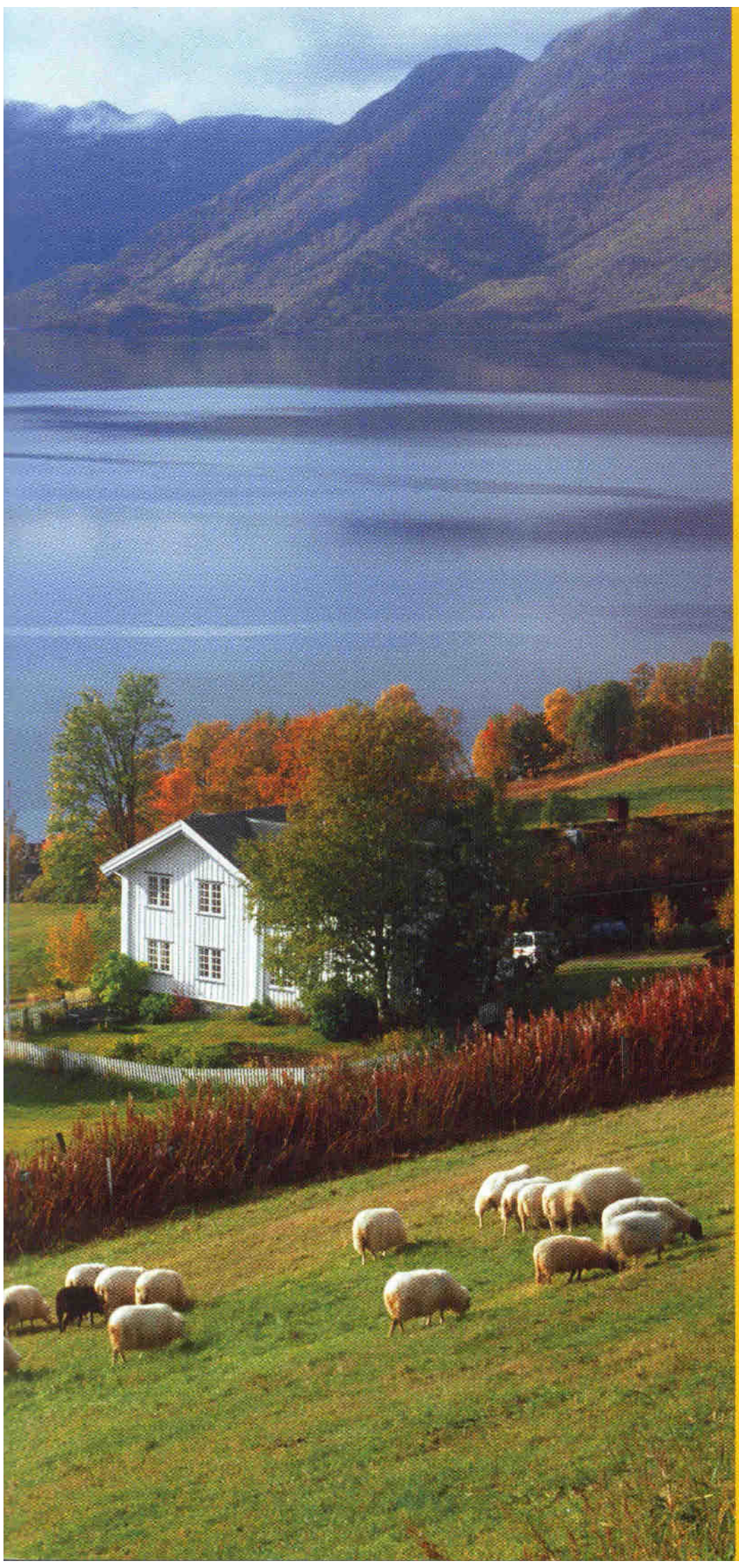


Multifunctional agriculture

– the case of Norway

LANDBRUKSDEPARTEMENTET

Ministry of Agriculture

Area distribution of Norway

Norway - composition of different land types.

Land type	% of total land area
Mountains	48
Productive forest	22
Unproductive forest	15
Bogs and wetland	6
Lakes, glaciers	5
Agricultural land	3
Urban land	1

Multifunctionality and the specificity of agriculture

Agricultural products are unique and most essential commodities in every society. (Samfoto/Øystein Sørbye)

(Opplysningskontoret for kjøtt)

Agricultural products are unique and most essential commodities in every society. Beyond its primary role of producing food and fibre agriculture also contributes to the viability of rural areas, food security, the cultural heritage and environmental benefits such as the agricultural landscape, agro-biological diversity, land conservation and high standards of plant, animal and public health. These additional functions of the multifunctional agriculture are often referred to as non-trade concerns (NTCs) in the World Trade Organization (WTO). Most NTCs are unique to agriculture and have public goods characteristics that may justify government intervention. Moreover, most of these public goods cannot be disassociated from the agricultural production activity itself, as they are provided *jointly* with, and therefore depend on, ongoing agricultural production. Further, agricultural production is biological and site-specific. All these special and multifunctional characteristics of the agricultural sector need to be recognised and call for continued special treatment of the agricultural sector within the multilateral trading system.

The issue of jointness

Taking account of NTCs, including food security and the need to protect the environment, is an integral part of the Uruguay Round (UR) outcome and the mandate for continuing the reform process. During the UR Norway stressed the importance of NTCs as vital elements of the overall reform process. While different countries are giving different weights and priorities to individual NTCs in a multifunctional agriculture, their safeguarding is a legitimate key priority in both developing and developed countries.

Three conclusions can be drawn with regard to NTCs, conclusions that have important implications for the continuation of the reform process.

Most of the public goods cannot be disassociated form the agricultural production activity in itself, as they are provided jointly with, and therefore depend on, ongoing agricultural production. (Samfoto/Jon Arne Sæter)

First, NTCs are often unique or specific to agriculture. Most of the actual NTCs safeguarded by agriculture cannot be provided by other sectors. Of the various NTCs listed by WTO Members, the viability of rural areas is probably among the few in which sectors other than agriculture can play, and are playing, an important role. However, in remote regions of many developed countries or in the case of developing countries with predominantly agrarian economies, agriculture's contribution to rural employment and economic and social viability is fundamental.

Second, NTCs often have public goods characteristics. While private goods can be exchanged in a market, NTCs often have public goods characteristics for which, by definition, functioning markets are lacking. Furthermore, the scope for market creation seems to be limited. While market creation is possible in certain cases, government intervention may be justified in order to correct the underprovisioning of NTCs with public good characteristics and to internalise externalities.

Third, most NTCs can only be safeguarded jointly with agricultural production. Most NTCs cannot be disassociated from agricultural production. This joint production relationship is complex and may relate to certain types of input use, farming practices or technologies, to agricultural output, or to a combination of all these elements. For instance, as part of a country's policy to ensure long-term food security, a certain degree of domestic food production may, in addition to other factors such as stable access to world markets and stockholding, be judged as essential. Therefore, continued and sustained safeguarding of NTCs requires a viable domestic agricultural sector with agricultural production.

Furthermore, since agricultural production is biological and site-specific, it has many special features. All the special and multifunctional characteristics of the agricultural sector need to be recognised and call for special treatment within the multilateral trading system. This will benefit both developing and developed countries.

Old national breed – Telemark cow. (Jan Erik Kjær)

Disparities between and within countries

Contrary to most private goods for which international markets exist, NTCs, in general, cannot be ensured through trade, but need to be provided by domestic agricultural production. To some extent food security represents an exception, as both domestic production and a predictable and stable trading system contribute to increased food security. The domestic safeguarding of NTCs varies substantially from country to country, as well as within countries, depending on national priorities (i.e. demand side variations) and the cost levels that each country's agricultural sector is facing (i.e. supply side variations).
One particular aspect that needs to be duly taken into account in the negotiations is the narrow product range that many countries rely on when addressing NTCs. The dependence on a relatively limited number of commodities could be related to specific supply side constraints, for instance climatic conditions. Dependence on specific commodities may also be related to the specific public goods that these commodities provide, for instance the contribution made by production of a specific commodity to land conservation (e.g. the importance of paddy fields in flood control and prevention of land slides and soil erosion).

World agriculture is facing a considerable diversity of production conditions, between and within countries and regions, due to natural conditions (e.g. climate, soils and topography), social and cultural conditions (e.g. agrarian structure) and institutional and economic conditions (e.g. infrastructure and labour costs). (Samfoto/ Stig Tronvold)

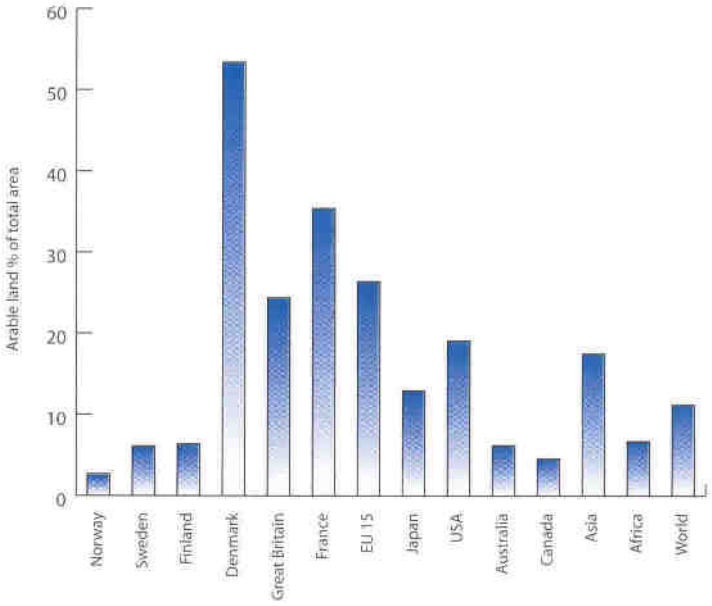
Demand side variations

On the demand side, for a number of reasons related to for instance their cultural, economic, or historical backgrounds, countries are demanding different goods and services from their agriculture, thus

Climatic conditions in some countries.

Site	Length of growing season (days > 5°C)	Temperature sum (of days > 5°C)
East Norway, Ås	190	1327
North Norway, Tromsø	140	612
Huron, USA	210	2390
Nebraska, USA	232	2799
Paris, Frankrike	281	2140

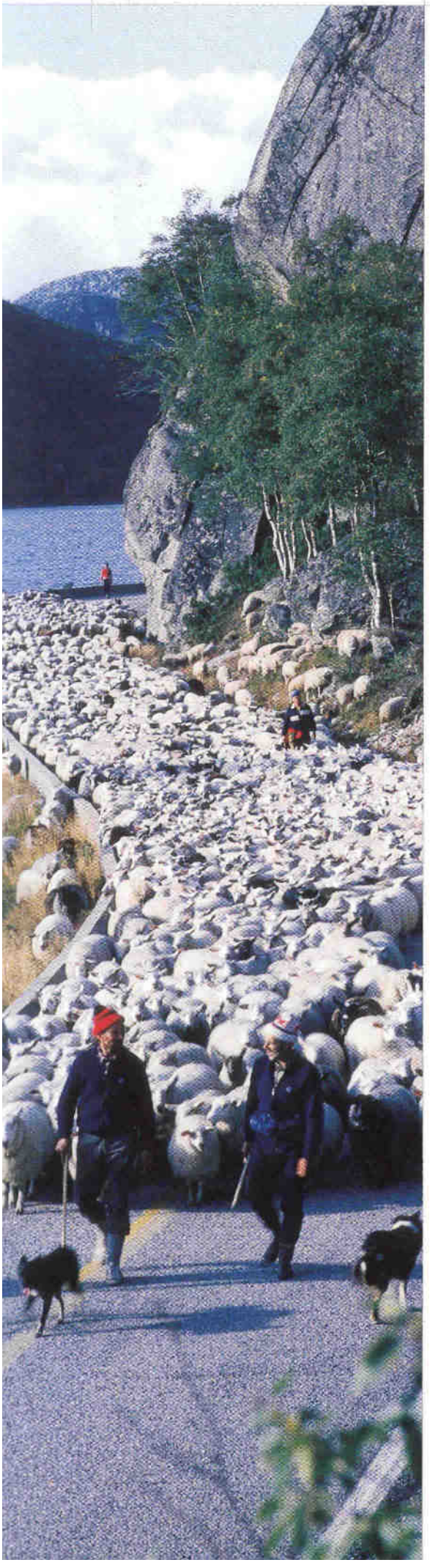
Amount of arable land in different countries (1999).



Source Faostat 2002, Category 061 Arable land and permanent crops.

giving different weights and priorities to different NTCs in a multifunctional agriculture.

For instance, predominantly agrarian countries or countries with few alternative employment opportunities for their rural populations, tend to put more emphasis on agriculture as a rural employment generator than countries whose rural population can relatively easily find jobs in other sectors. Moreover, countries with low population densities tend to put more emphasis on decentralised settlement policies. Furthermore, in countries in which farming has been an economic activity since ancient times, agriculture makes important contributions to biodiversity and the cultural heritage. A third example is the issue of food security, which is approached differently in net food-importing versus net food-exporting countries. A fourth example is environmental and food safety issues, for which consumer sensitivity varies between countries.



Supply side variations

On the supply side, world agriculture is facing a considerable diversity of production conditions, between and within countries and regions, due to natural conditions (e.g. climate, soils and topography), social and cultural conditions (e.g. agrarian structure) and institutional and economic conditions (e.g. infrastructure and labour costs).

Many developing countries, due to for instance poor soils, difficult climatic conditions (e.g. low and erratic rainfall), small farms, poor infrastructure and limited access to new technologies are facing production costs above world average. These differences in production conditions help to determine the extent to which the various WTO Members are able to compete in world agricultural markets.

As a result of this considerable diversity of production conditions, agricultural production costs vary substantially within and between countries. In case of dairy production, current production costs are as much as six to seven times higher in Norway, compared with the most cost-efficient producers. The corresponding figure for wheat/barley is four to five times the most efficient producing country and indicates the same disparity between countries.

In agriculture, Norway faces unusually high production costs for a number of reasons. All the disadvantages stemming from a harsh climate, long distances, a difficult topography, a low population density and a small-scale structure, combined with a general high cost level, result in high costs and a very low degree of competitiveness at world market prices.

Structural adjustment of the agricultural sector has contributed and will continue to contribute to reductions in overall cost levels. However, in many countries like Norway the scope for such reductions is relatively limited. Firstly, in many countries the potential for structural adjustment in terms of large-scale production is restricted by natural conditions, partly because fields and farms are relatively scattered. Secondly, even with a shift to larger production units, overall costs would still be very high, suggesting that costs relating to labour and natural conditions are very important. In addition, extensive structural adjustment would have a considerable negative impact on important NTCs such as rural employment, agricultural landscapes and bio-diversity.

Production costs in dairy farming for some countries.

Country	Production costs NOK/kg milk	Herd size
Australia	1.34	150-250
Frankrike	2.83-3.54	30-75
New Zealand	1.20	225-482
Norge	5.51-8.06	13-29
USA	1.77-2.12	70-600

Source: International farm comparison network (1998) and Norwegian agricultural economics research institute (1999).

(Oskar Puschmann)

Norwegian agriculture

(C.A. Smedshaug)

Norway is the northernmost country in Europe. Its mainland extends from 58° to 71° North, a total distance of about 1 750 km, greater than the distance between Oslo and Rome. The country's population density is 14 people/km², the second lowest in Europe (only Iceland has a lower density).

The main productions are dairy and meat products, eggs, cereals and temperate fruits and vegetables. About three quarters of farm income is derived from livestock production and one quarter from crop production. The production is almost entirely destined for the national market and plays an important role in ensuring national food security, sustaining the viability of rural areas and safeguarding certain environmental qualities.

Arable land is scattered all over the country and represents only a fraction of the total area in Norway, which mainly is mountainous area. Norway has about 0.2 ha arable land pr. inhabitant. The average farm size is around 16 ha arable land, while the average field size is only 1.5 ha. Only 1/3 of arable land is suitable for cereal production. Generally, this land is located in the lowland of the South Eastern Norway, generally closer to urban areas. Due to, inter alia, unfavourable climatic conditions, the remaining 2/3 of arable land is only suitable for fodder production (basically grass) for the purpose of bovine and sheep meat and dairy production (goat and cow). This land is generally located in the fjord and mountain areas and in Northern parts of the country. Through a set of policies lowland farmers have been encouraged to stay out of dairy production and concentrate on cereal production, thus allowing the remaining farmers of the fjords, mountains and of Northern Norway to cover a substantial part of the national dairy and meat market.

Norwegian agriculture, key figures for 2001 if nothing else is stated.

Number of active farm units	64 600
Man-years in primary agriculture	72 600
Contribution to employment	3.9 %
Contribution to gross domestic product	0.9 %
Value of produce from farmer*	17.5 bill NOK
Value of produce from agro-food industry** (1999)	72.3 bill NOK
Man-years in processing industry ** (1999)	34 592
Self-sufficiency on calorie basis (2000)	49 %
Value of agricultural export	3.5 bill NOK
Value of agricultural import	11.5 bill NOK

* Excluding all budget support

** Without tobacco, beverages, and alcoholic items

Average national sizes of production units of cow and sheep herds, pig and hen flocks (2001).

Production	Average unit size
Milk	15 cows
Sheep meat	54 sheep
Pigs for breeding	34 pigs
Pigs for slaughtering*	480 pigs
Eggs	2 323 hens**

** Yearly delivery, units delivering below 100 pigs excluded.*

*** Units below 100 hens excluded.*

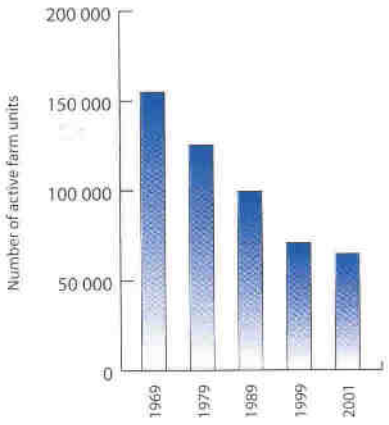
The arctic and sub-arctic conditions in Norway are characterised by harsh climate, low temperatures and a short growing season, which varies between 100 and 190 days, largely dependent on latitude and distance from the sea. The indoor period for livestock varies from around 200 to 260 days a year. All the disadvantages stemming from a harsh climate, long distances, a difficult topography, a low population density and a small-scale structure result in high costs and a low degree of competitiveness to world market prices.

Volumes and value of commodities produced in Norway representing nearly 90 % of the value of produce from farmer and % of national consumption.

Product	Volume (in tonnes)	% of National consumption (1999)	Share of total farm income from the different productions (2000) %*
Milk	1 559 mill liters	99	32.4
Beef meat	90	97 % (total meat)	32.1 (total meat)
Sheep/lamb meat	23		
Pig meat	102		
Chicken meat	43		
Eggs	47	98 %	2.4
Cereals	1 351		12
Cereals for food	124 (1999)	36 %	
Potatoes	380	83 %	2.1
Vegetables	161	58 %	7.5 (including fruit
Fruit and berries	71	18 %	and berries)
Sugar and honey	1.25	3 %	
Fat and oils		20 %	

* Based on value of produce from farmer + support for produced quantity.

Number of active farm units



The goals of Norwegian agriculture

To meet society's needs, agriculture shall:

- produce safe and healthy food of high quality in the light of consumer preferences
- produce other goods and services in accordance with the sectors overall resources
- produce public goods as viable rural communities, a broad range of environmental and cultural benefits, and long term food security.

Specific non-trade concerns

Food security

All countries have to ensure food security for their people, through domestic production, stockholding and imports.

Several background elements contribute to such a conclusion. **First,** market mechanisms alone may not be sufficient to ensure food security. Food security therefore has the characteristics of a public good, the provision of which may require government intervention.

Second, the WTO agricultural reform process must be consistent with other relevant multilateral commitments such as those relating to the right to food. Article 11 of the International Covenant on Economic, Social and Cultural Rights recognises the fundamental right of everyone to be free from hunger, emphasises the responsibil-

Norwegian agriculture is almost exclusively supplying the domestic market. Agricultural imports cover around 50% of domestic agricultural consumption measured on a calorie basis, among the highest import share of the OECD countries. (Samfoto/Birger Areklett)

It is a national objective to maintain domestic production and, within existing multilateral trade commitments, cover the national demand for those products that naturally grow in Norway. Partly due to unfavourable climatic conditions, 2/3 of arable land is only suitable for fodder production (basically grass) for the purpose of bovine and sheep meat as well as dairy production (goat and cow). (Samfoto/Pål Hermansen)

ity of the state in this respect and underlines the necessity of "*taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need.*"

Third, we need to recognise that agriculture is a complex and long-term activity, which only slowly responds to changes in demand. This has important implications for our national food security strategies. One, since agriculture is a biological production characterised by seasonality and constrained by climatic conditions and the limits that exist for reproductive growth, the establishment and expansion of such production is complex and would often take several years. Two, agriculture is site-specific and requires locally adapted know-how and competence relating to for instance microclimates, soils, pests and diseases. If agricultural production is abandoned in a specific region, such site-specific competence is likely to get lost. Three, agricultural production often relies on heavy infrastructure and investments related to for instance land reclamation, terraces, roads, drainage and irrigation systems, buildings, etc. Establishing or restoring agricultural production may therefore be very costly and time-consuming. Four, agricultural production is often relatively small-scale and dispersed,

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