

Implications for Agricultural Policy

5.1. Introduction

There is little diversity in Icelandic agriculture, which is primarily based on grass cultivation, grazing and forage conservation, and the production of meat and milk from ruminants. Around 80% by value of agricultural production is obtained from sheep and cattle farming. The remainder is obtained from horses, pigs and poultry, potatoes and vegetables (including glasshouse products).

An objective of agricultural policy in Iceland is self-sufficiency in those products that can be economically produced locally. To achieve this, it is necessary to control fluctuations in production, such as those caused by climate, so that supply matches demand, thus avoiding shortages and overproduction. A further objective, arising from the isolation of the country, is to depend as little as possible on imported resources. One way to meet these goals is to ensure the retention of fodder reserves and other food products in order to buffer the effects of unavoidable or natural fluctuations.

The influence of climate on agricultural output is largely the result of its effects on plant growth, both on cultivated pastures and on rangelands. As in other industrialized countries, it has been possible to mollify the effect of climate with various technological and economic measures. However, extreme weather conditions can still have considerable impact, as was shown during the late 1960s, when severe winter kill of grasses occurred. The wet summers which from time to time cause great losses to farmers are another example. These losses are caused by unsuccessful fodder conservation, especially during hay-drying, which is the main method of forage conservation in Iceland. In wet summers up to 30-40% of digestible dry matter can be lost, whereas under favorable conditions the loss is only 7-10% (Gudmundsson, 1977).

Figure 5.1 summarizes the effects of climate on sheep farming and shows how its effects on a particular farm can be modified. Success in moderating the effect of climate depends on the ability of the manager, the technological level of

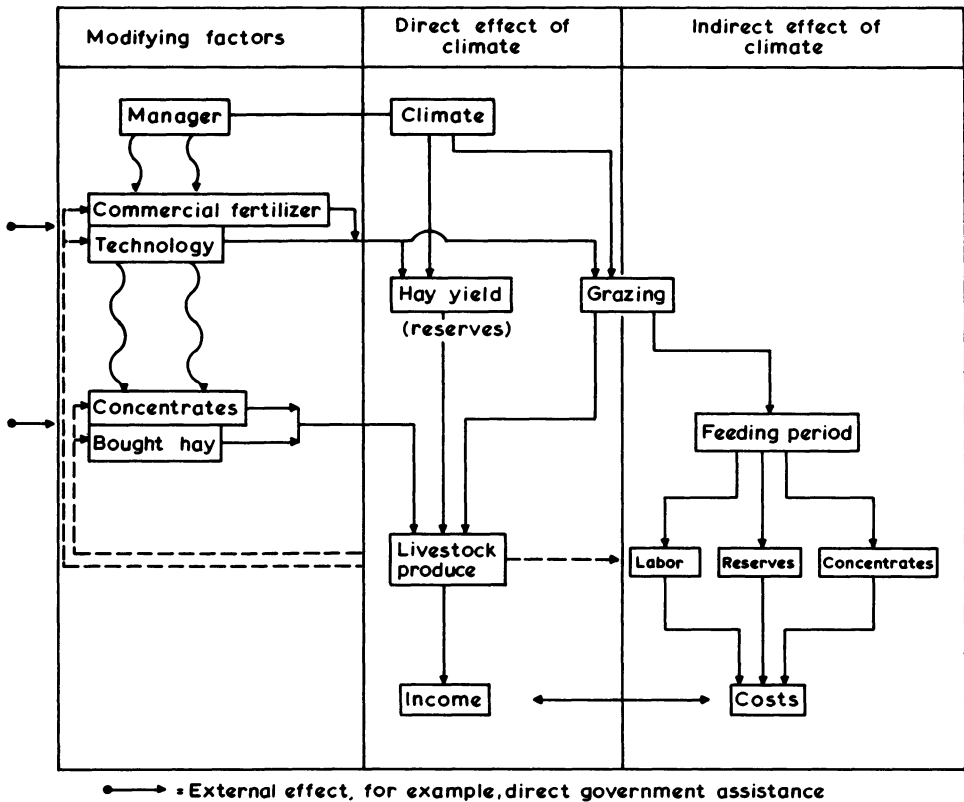


Figure 5.1. Effects of climate on Icelandic agriculture. In the case of specialized crop cultivation, such as cultivation of fodder plants or vegetable production, certain effects do not apply, but otherwise the interactions are the same.

the particular farm activities, the price of various materials and government actions. These points will be discussed later.

5.2. Types of Effects and Responses

With the prevalence of market forces in most industrialized countries, both beneficial and detrimental variations in climate have a considerable effect on market balance and hence on agricultural income. The response must come from government, research and advisory institutions and from farmers themselves.

Responses to climatic fluctuations can be divided into two categories according to the type of fluctuation. On the one hand there are short-term fluctuations lasting only a single season, or one to two years. On the other hand there are longer-term changes that persist more or less continuously over three or more years. The consequences of climatic fluctuations for agriculture and responses to them have been categorized in Table 5.1. Beneficial and detrimental variations are considered separately.