

Country Pasture/Forage Resource Profiles

MARSHALL ISLANDS



by
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1. INTRODUCTION

The Marshall Islands are at the extreme of Micronesia. The total land area is really small, approximately 181.5 km² of dry land distributed over 33 low lying coral atolls. Within these island groups there are approximately 1 156 small islets and a lagoon area of 11 672 km² (Lambert, 1982). The Marshall Islands are made up of almost parallel chains of 34 islands and islets (29 coral atolls and five coral atolls) that form a double chain, known as the Ratak (Sunrise) chain and, approximately 210 km to the west, the Ralik (Sunset) Chain. Some atolls enclose very large lagoons, particularly Kwajalein, with 90 islets and enormous lagoon covering a total surface area of 2 335 km². The five coral islands without lagoon are less than 1 km² in area. (see Figure 1).

The population was given as 63 225 by Lal and Fortune (1999), although the SPC had a lower estimate of 51 800 for 2000, and is unevenly distributed with over

60% located in the urban area of Majuro the administrative capital and Ebeye the second largest urban centre (Thomas, 1987). The last census in 1999 gave a total of 50 840 and according to SPC (2008) the estimated mid-year 2008 population was 53 236, for mid-year 2010 it is projected to be 54 305 with an annual population growth rate 2008–2010 of 1.0%. The World Factbook estimate for July 2008 is higher at 63 174 with a growth rate of 2.142%. The ethnic groups are Marshallese (96.0%); other Pacific Islanders (1.7%) and Filipino (0.5%). The capital city is Majuro on Majuro atoll.

The Marshallese people's agricultural economy is based on copra (Lambert, 1982). Coconut is the main crop followed by breadfruit, pandanus, banana, taro and arrowroot. Minor crops planted are pawpaw, sweet potato, limes and vegetables. There is a strong cash economy on Majuro and Ebeye, while a subsistence economy prevails on the outer islands. The Marshall Islands is heavily reliant on imports, mainly from the United States and has a large trade deficit. Tuna fishing by foreign vessels in Marshall Island waters is a source of revenue.

2. CLIMATE AND AGRO-ECOLOGICAL ZONES

The climatic conditions are similar to those in other islands of Micronesia, except that the northern Marshalls have rainfall as low as 152 mm while the southern parts has a high 4 000 mm per annum. Several of the northern islands are uninhabited due to lack of rain. The rainfall is seasonal, December to March being the drier months; and May to August the wetter months. Rainfall in any one atoll varies greatly from year to year. Due to the porosity of the soil, the rainwater soon disappears from the soil surface.

Coral atolls which receive less than 1 000 mm of annual rainfall have very limited possibilities because of a long dry season. However, those with rainfall range between 1 000–2 500 mm are more favourably disposed for cropping but are limited in fresh water ground supply. The lagoon strand bears coconut and pandanus trees. The interior, often covered with dense jungle-like growth, is usually planted with breadfruit trees as well as hardy beach shrubs that are exposed to salty spray from the ocean surf.

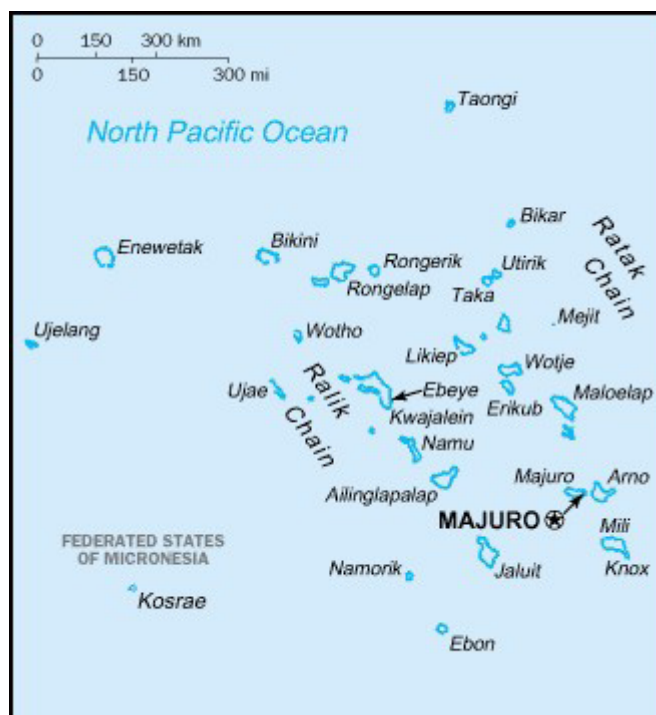


Figure 1. Map of Marshall Islands

Source: *The World Factbook*

3. SOILS AND TOPOGRAPHY

Sandy soils of low fertility and the topography are typical of most of the atolls. The poor atolls support only a limited range of plants and the growth of vegetation is hampered also by salt spray water which sweeps over the islands during the season of the northeast trades, killing or seriously inhibiting plant growth. Soils on coral islands or atolls are poor, requiring much persistence for production of even basic crops. Since they are either atolls or raised coral Islands, elevation is slight. Highest point in the entire group is Likiep, 10 m above sea level. The lagoon reef offers a great variety of marine life.

At Kwajalein Atoll, the largest in Marshall Islands, there are 93 separate, named islets on the encircling reef. These range from little more than sandbars, with only token plant growth to Kwajalein Island that is 3.036 km².

4. RUMINANT LIVESTOCK PRODUCTION SYSTEMS

Due to the nature of the soil and its vegetation, ruminant livestock production based on pasture is very limited. The subsistence system of production is practiced in Marshall Islands. In past years a few goats were kept, tethered during the day under coconut plantations that have little

undergrowth. Presently there are no cattle or goats and the main livestock kept are pigs (approx. 15 000) and chickens (90 000); numbers given are for 1999.

Table 1 presents some statistics for livestock numbers and beef imports for the Marshall Islands for the period 1996–2006 (for which there is little available data)!

The poor atoll soils that prevail support only a limited range of plants and the growth of vegetation is hampered also by saltwater spray which sweeps over the islands during the season of the north-east trades, killing or seriously inhibiting plant growth. By atoll standards the vegetation of the Marshall Islands is poor.

Table 1. Marshall Islands statistics of livestock numbers and beef and veal imports for the period 1996–2006

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Cattle nos.	n.r	n.r	n.r	n.r	n.r	n.r	n.r	n.r	n.r	n.r	n.r
Goat nos.	n.r	n.r	n.r	n.r	n.r	n.r	n.r	n.r	n.r	n.r	n.r
Beef and veal imports (tonnes)	6	6	30	20	10	20	180	150	50	40*	n.r

n.r. = no record

* in addition quantities of sheep meat, pig meat, chicken meat (2005–730 mt), eggs (2005–160 mt) and fresh (2005–80 mt) and dried milk are imported

No data for 2007 and 2008

Sources: FAO Yearbook, Production Vol. 52, 1998; FAO Quarterly Bulletin of Statistics Vol. 12, 1999; FAO Yearbook Trade Vol. 52 1998; FAOstat

5. CONSTRAINTS TO DEVELOPMENT OF PASTURE-BASED LIVESTOCK PRODUCTION SYSTEMS

Several factors affect the development of pasture based livestock in Marshall Islands, and these are:-

- (1) People are used to the keeping of the traditional livestock – poultry and pigs that are raised on the free-range system, and not ruminant livestock. Therefore, very few small ruminant livestock are found in Marshall Islands.
- (2) Rainfall pattern of the islands does not sustain the growth of most common grass and legume species.
- (3) The salt spray factor is constant and this affects crops.
- (4) The sandy nature and low fertility of the soil does not permit the growth of most grasses and legumes. Besides, the soils are unprotected salt water spray.

- (5) The strict rules and principles that governed the traditional land tenure system are also a constraint. Therefore there is insufficient land for the cultivation of food crops let alone land for pasture development (IPS, 1987).
- (6) Subsistence farming and fishing are the major focus of the majority of the people.

6. PASTURE RESOURCES

Shrubs form an outstanding part of the vegetation in Marshall Islands. The weedy undergrowth in the coconut plantations has in the past served as pasture for grazing animals (a few goats). The dominating vegetation of these coral islands is made up of the coconut palm (*Cocos nucifera*) followed by pandanus, breadfruit (*Artocarpus artilis*), *Pisonia grandis*, *Messerschmidia argentea*, *Morinda citrifolia* and *Premna obtusifolia*. Shrubs that form an outstanding part of the vegetation are *Scaevola sericia* and *Pemphis acidia*.

7. RESEARCH AND DEVELOPMENT ORGANIZATIONS AND PERSONNEL

No information

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[The profile was lightly edited by J.M. Suttie and S.G. Reynolds in May 2002 and modified by S.G. Reynolds in May 2006 and January 2009.]