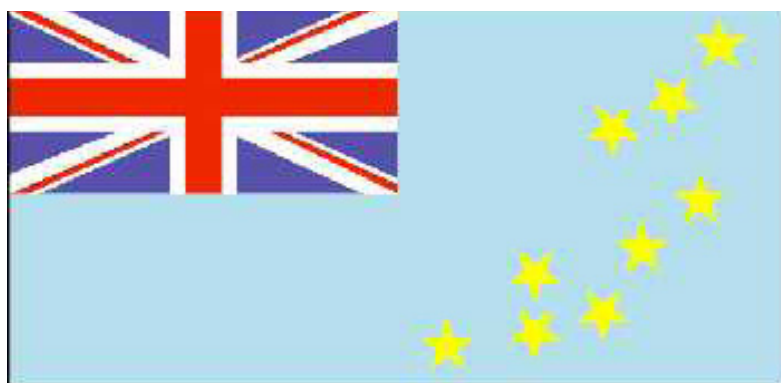


Country Pasture/Forage Resource Profiles

TUVALU



by

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1. INTRODUCTION

Tuvalu comprises nine islands (atolls) in the southwest Pacific between 5° and 11° south the and 176° and 180° west (Lambert, 1982). The nine islands are Funafuti, Vaitupu, Niutao, Nanumea, Nanumaga, Nukufetau, Nui, Nukulaelae and Niulakita (Douglas and Douglas, 1989) – see Figure 1. They have a total land area of approximately 26 km² and are all less than 5 m above sea level (see World Factbook). The islands are scattered over about 1.3 million km² of the Pacific Ocean forming a chain running in a northwest to southeast direction of some 579 km in length. Tuvalu is an independent state and the country has 1.3 million km² of ocean. The population was 9 561 in the 2002 census. SPC estimates (SPC, 2008) are 9 729 for mid-2008 and 9 786 for mid-year 2010 (with a growth rate of 0.3% for 2008–2010). According to the World Factbook July 2008 estimate the population is 12 177 with a growth rate of 1.577%.

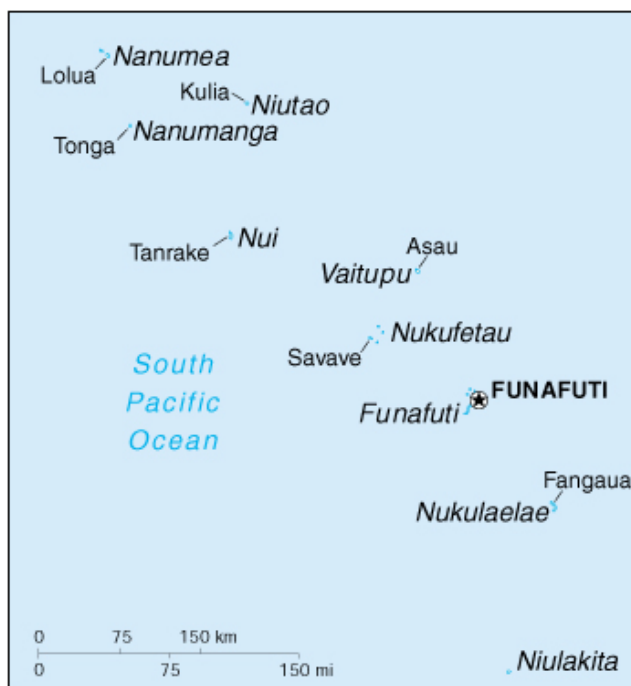


Figure 1. Map of Tuvalu

[Source: The World Factbook]

The islanders of Tuvalu are Polynesians

and females outnumber men, due to migration of working males. It is only at Funafuti and Nukufetau that ships can enter the lagoons, elsewhere there is no anchorage at all except in the calmest weather. Although Tuvalu is to the north of the recognized hurricane belt, the islands have been struck on a number of occasions in modern times by severe cyclones (Maddison, 1989), with three cyclones in 1997 (World Factbook).

Tuvalu has a mixed market subsistence economy. Although agriculture has been and will remain a major development activity in Tuvalu, Tuvalu is not self-sufficient in agricultural production. However, development projects are focusing on meeting at least 50% of food requirements. Fishing and farming are inexorably linked with the everyday lives of the people and agriculture is important within the general economy mainly as the provider of subsistence for the majority of the population.

Copra is the only export, but even that it is a very limited commodity. Ruminant livestock production is not part of the farming culture of the Tuvalu people and there is little information available. Table 1 provides some statistics on production and imports. Pork and poultry are produced for local consumption

Table 1. Tuvalu statistics of livestock numbers, pig meat production, beef and veal, mutton and lamb and milk imports for the period of 1997–2007

Item	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Goat nos.	-	-	-	-	-	-	-	-	-	-	-
Pig nos.(,000)	13	13	13.2	13.2	13.2	13.5	13.5	13.5	13.5	13.5	13.6
Chickens (,000)	35	35	40	40	40	45	45	45	45	45	45
Pig meatprod. (Mt)	88	88	90	90	90	93	93	93	93	93	95
Chicken meat prod. (Mt)	37	37	41	41	41	45	45	45	45	45	45**
Mutton/lamb imports (Mt)	50	20	40	40	2	26	15	24	30	21	n.r
Chicken meat imports (Mt)	100	170	160	290	60	250	116	228	174	190	n.r
Fresh milk imports (Mt)	3	5	6	5*	1	3	2	4	2	-	n.r
Beef /beef preparations imports (Mt)	30	30	40	40	27	285	60	69	97	49	n.r

* dry/evap.and condensed milk imports are also considerable e.g. in 2000 there were 29 Mt and 71 Mt in 2005, and milk equivalent import was 278 Mt in 2000 and 430 Mt in 2005

** and also 22 Mt of eggs

n.r no record; no data for 2008

FAO on-line statistics database

and a few goats (although no details are available of any goats at present) were kept mainly for grazing under the coconut trees.

2. CLIMATE AND AGRO-ECOLOGICAL ZONES

The climate is pleasantly tropical, if monotonous as there are no marked wet and dry or hot and cold seasons. The temperature ranges from 20.6–35.6 °C, but the heat is moderated by trade winds that blow from the east for much of the year. Although annual rainfall ranges from 2 800–3 000 mm, it can vary considerably, not only between islands but also from year to year. In an average year, the annual rainfall extends to 3 000 mm in the islands farthest to the south. The islands are composed of coral reefs built on the outer arc of the ridges formed by pressure from the Central Pacific plate against the ancient Australian landmass (Trewren, 1986). In general, Tuvalu has a pleasant tropical climate with an average temperature of 30 °C.

3. SOILS AND TOPOGRAPHY

The soils in Tuvalu are of poor quality. The islands are low lying atolls nowhere rising more than 4.6 m above sea level. In five of the atolls, the reef encloses sizeable lagoons, but in the remainder the islands comprise pinnacles of land rising sheer from the ocean bed (MCNR, 1984). Because of the atoll terrain, there are no rivers. Vaitupu, Niutao, Nanumea and Niulakita are reef islands. Vaitupu has a closed-off lagoon, and there is a brackish lake on Niutoa.

4. RUMINANT LIVESTOCK PRODUCTION SYSTEMS

The atolls are ecologically fragile with their natural systems susceptible to disruption. Coconut trees are the main vegetation cover on most of the islands. The underground cover (legumes) such as *Vigna marina* and *Scaevola* constitute the major pasture species found under the coconut trees for ruminant livestock (goats) which were held on smallholder systems of production (Hussain, 1987).

Goats were introduced to Tuvalu from Fiji under the FAO/UNDP Fiji Goat Project (Fiji 75/004) (Hussain, 1981, 1987). At the time of writing there are no ruminant livestock in the Tuvalu and there is no record of large ruminant livestock production in the past. However, variable amounts of secondary vegetation are available in the coconut plantations. This undergrowth adversely affects the output from the plantations as it can neither be used for direct human consumption nor can the traditional type of livestock (pigs and poultry), currently reared in the atolls, make use of it for their maintenance.

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

There are no ruminant livestock population and therefore there is no imminent desire to establish pasture. Coupled with this are the problems of poor soils and the fragile ecological system. The weather conditions combined with the geographical size of the atolls preclude the development of pasture based livestock systems.

Perhaps the emphasis on respect for the social structure of society in Tuvalu is a constraint to the development of agriculture in general, but there are many physical constraints to increasing output and

improving the quality of agricultural products in Tuvalu. Also very little work has been carried out elsewhere in the field of coral atoll cultivation, thus there is limited information to which to refer.

6. THE PASTURE RESOURCE

Coconut trees cover most of the islands and they form the main vegetation. However, under the coconut trees, vines and creepers are important components of the underground cover and the goats introduced in the eighties under certain circumstances ate many of these. The legume *Vigna marina* was most palatable, however, *Scaevola* was more productive (Hussain, 1987). Breadfruit trees abound in Tuvalu and their leaves could be used as fodder for ruminant livestock nutrition in case the Government of Tuvalu deemed it necessary to introduce ruminant livestock in the future, but this is thought unlikely.

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