

FIJI LIVESTOCK SECTOR STRATEGY

FINAL REPORT

Livestock Sector Strategy Working Group
and
Ministry of Agriculture, Fiji



11 March 2016



Cover photos: Clockwise from top left: Mohammed Yaz & goats, Nasarawaqa (FDB); Iliani & Sitiveni in their dairy shed (FDB); Rooster Poultry processing; Beekeeping training; Yaqara bull; Fiji Fantastic sheep; Pig feed a challenge (Pacific Reach Ltd, The Jet Newspaper)

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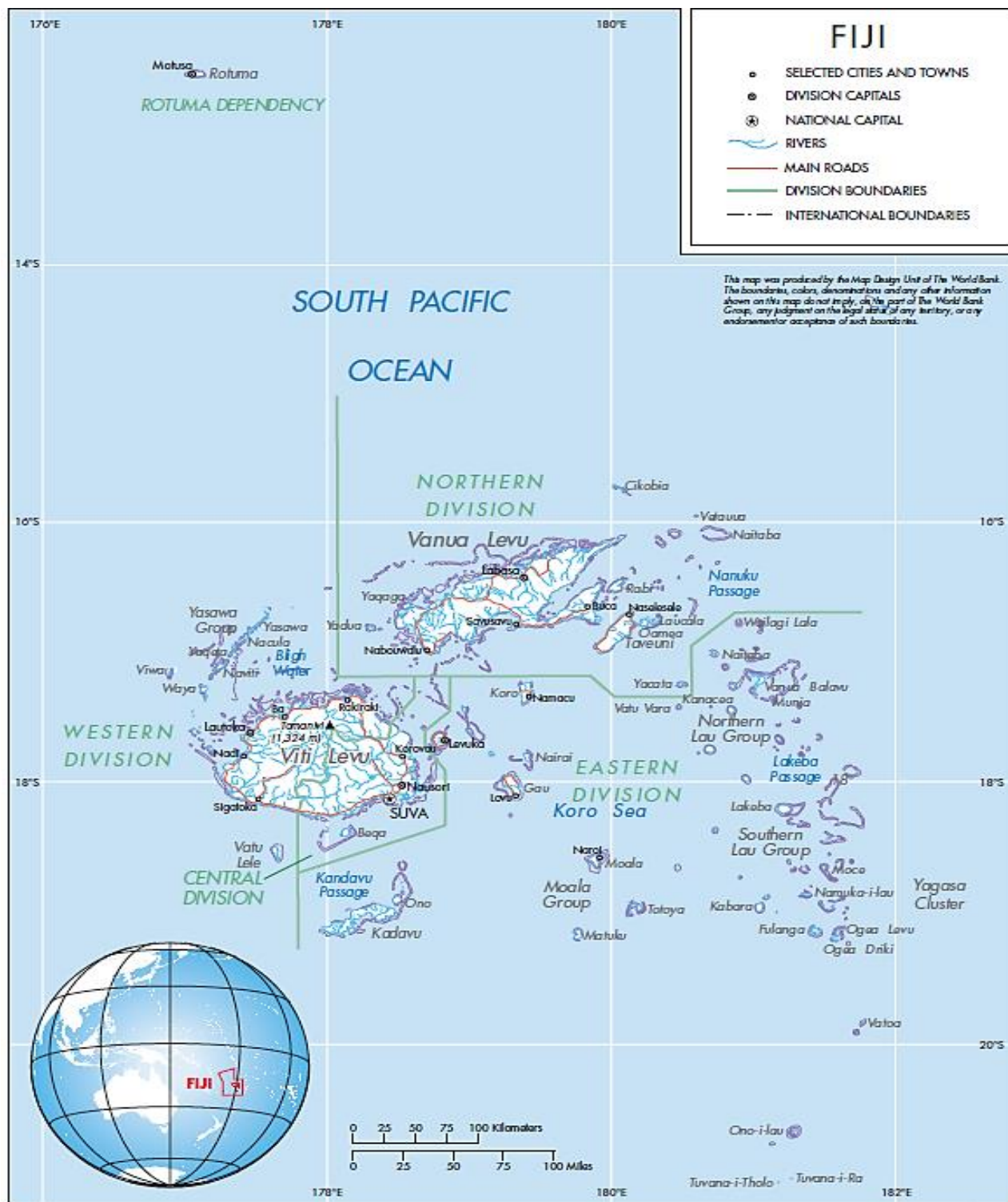
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Note: currency used is Fiji Dollars (\$)

ACRONYMS

ADB	Asian Development Bank
AGO	Attorney General's Office
AHP	Animal Health and Production department
AMA	Agro-Marketing Authority
APTC	Australia Pacific Training Center
BAF	Biosecurity Authority of Fiji
EPS	Economic Planning and Statistics
EU	European Union
FAO	Food and Agriculture Organization
FCDCL	Fiji Cooperative Dairy Company Limited
FCLC	Fiji Crop and Livestock Council
FDB	Fiji Development Bank
FRCA	Fiji Revenue and Customs Agency
FMIB	Fiji Meat Industry Board
FNU	Fiji National University
GDP	Gross domestic product
GMP	Good manufacturing practice
HACCP	Hazard analysis critical control point
ICT	Information communication technology
IFAD	International Fund for Agriculture Development
ILRI	International Livestock Research Institute
LRD	Land Resources Division
LSSWG	Livestock Sector Strategy Working Group
MOA	Ministry of Agriculture, Fiji
MOF	Ministry of Finance, Fiji
MOFA	Ministry of Foreign Affairs, Fiji
MOT	Ministry of Trade, Fiji
NCD	Non-Communicable Diseases
NDMO	National Disaster Management Office
OIE	World Organization for Animal Health
PACER	Pacific Agreement on Closer Economic Relations
PAPP	Pacific Agriculture Policy Project
PPP	Public private partnership
PRC	Peoples' Republic of China
PSC	Public Service Commission
Q&S	Quality and safety
R&D	Research and development
RBF	Reserve Bank of Fiji
RDSSSED	Roadmap for Democracy and Sustainable Socio-Economic Development
SPC	Secretariat of the Pacific Community
TLTB	iTaukei Land Trust Board
UNDP	United Nations Development Program
WB	World Bank
WTO	World Trade Organization



Acknowledgements

The Fiji Livestock Sector Strategy is the initiative of the Fiji Ministry of Agriculture (MOA) and has been supported by the EU-financed Pacific Agriculture Policy Project (PAPP) of the Secretariat of the Pacific Community (SPC). The Livestock Sector Strategy Working Group (LSSWG) steered the formulation of the Strategy. The chief editor, Chris Landon-Lane (Senior Consultant, FCG ANZDEC Ltd), was guided by SPC.

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Special acknowledgement must also be given to the Tutangi Katana, New Zealand High Commission to Fiji; Kofi Nouve, World Bank; Terry Copeland, New Zealand Young Farmers Federation; and Michael Parker, EU on Accompanying Measures for the Sugar Protocol Program.

SUMMARY

1. The Livestock Strategy is intended to promote a coherent Plan for the next 10 years and contains the following:

- a) A statement of a Vision for the sector, and the Goals of the Strategy, aligned with the Fiji National Agriculture Policy 2020;
- b) Activities to achieve the Goals;
- c) An implementation plan for the Strategy with an estimate of the costs for the first 5 years;
- d) Implementing and monitoring mechanisms for the Strategy, incorporating:
 - proposed role of the existing Working Group to assist with continuity;
 - proposed roles of the MOA, and the Fiji Crops and Livestock Council (FCLC) as an umbrella to the livestock producers' organizations.

2. The vision for the Strategy is:

“The livestock sector, led by industry and government, will comprise modern, competitive value chains that are sustainable, resilient and diverse, providing livelihood opportunity for youth and women, and contributing to economic growth and food security.” (*Fiji Livestock Sector Working Group, November 2015*).

3. There are four outcome goals and 68 activities that contribute to achieving this vision:

- 1) Improved governance
- 2) Competitive value chains
- 3) Sustainability and resilience
- 4) New generation opportunity

4. The logical framework structure and cost estimates for the first five years of the Strategy are summarized in Table 1. The total five-year cost is FJ\$ 91.85 million. Costs have been estimated based on current prices of equipment, civil works and services.

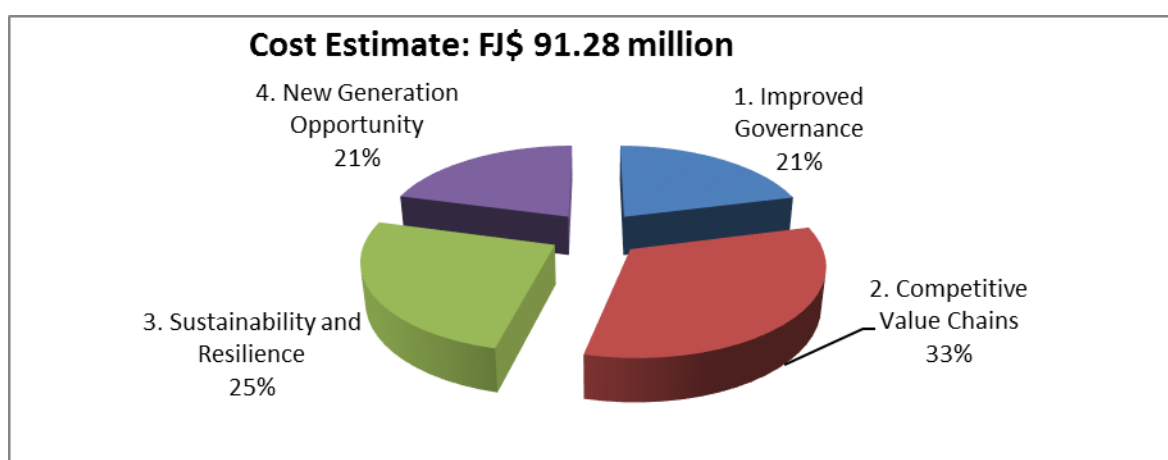


Figure 1: Chart of cost estimates

Table 1: Livestock Strategy Logical Framework

Outcome Goal	Output Objective	No. of Activities	Cost estimate (FJD '000)	
1. Improved Governance			Sub-total:	19,215
	1.1 Improved regulation	6	1,265	
	1.2 Industry leadership, inclusion and participation	2	250	
	1.3 Improved services capacity	4	3,500	
	1.4 Investment incentives	4	11,500	
	1.5 Effective implementation	2	2,700	
2. Competitive Value Chains			Sub-total:	29,840
	2.1 Innovation	6	10,950	
	2.2 Quality and Safety	4	1,050	
	2.3 Business confidence	2	360	
	2.4 Market development	4	15,800	
	2.5 Finance	4	1,580	
	2.6 Feeds	3	100	
3. Sustainability and Risk Management			Sub-total:	23,230
	3.1 Improved resilience and risk management	4	14,000	
	3.2 Sustainable use of natural resources	4	5,300	
	3.3 Insurance	2	1,080	
	3.4 Good practices	3	1,100	
	3.5 Food security	3	1,750	
4. New Generation Opportunity			Sub-total:	19,000
	4.1 Youth engagement	2	1,000	
	4.2 Youth employment	2	5,500	
	4.3 Skills and competencies	2	3,000	
	4.4 Inclusion of women	2	6,000	
	4.5 Access to land and finance for youth and women	3	3,500	
TOTAL	21 Output Objectives	68 Activities	Total:	91,285

5. Livestock sector stakeholders from both public sector and private sector are the owners of this Strategy. All suggestions and comments that have been submitted in writing to the Livestock Sector Working Group from November 2015 to February 2016 have been incorporated or addressed wherever possible in this version.

1 DESIGN AND CONTENT OF THE STRATEGY

6. The Livestock Strategy is intended to guide the detailed planning and implementation of activities to achieve the goals of the livestock sector stakeholders. The strategy is guided by the agreed policy, which includes a *vision* for the sector. The strategy sets goals that will contribute to achieving the vision. Each goal has a set of activities describing the tasks and investments needed to achieve the goal. There may be alternative ways of reaching the goal – where this is the case the least cost, most feasible, least risk, most beneficial, set of activities will usually be the set of activities selected.

7. The design and intent of the Fiji Livestock Strategy has been steered and fully informed by the principal stakeholders in the livestock sector, which are the farmers, private sector and their representative associations (particularly the FCLC, and the Ministry of Agriculture (MOA). The Ministry of Finance and National Planning (MFNP) also provided guidance to link the Livestock Strategy into the National Development Plan. Other stakeholders and services also contributed to the strategy (Table 2).

Table 2: Sources of Information and Planning Decisions in the Strategy

Contents	Purpose	References
Situation Trends and Issues	Describe the issues, trends and some of the baseline indicators	<ul style="list-style-type: none"> • Livestock Forum report • Agriculture Sector Policy 2020 report • Ministry of Agriculture (MOA), Fiji • Fiji Agriculture Census 2009 • World Bank metadata • Reserve Bank of Fiji (RBF), Fiji Revenue and Customs Agency (FRCA), Fiji Development Bank (FDB), Fiji Invest, iTaukei Land Trust Board (TLTB) • Livestock Assessment, EU Cardno 2010 • SPC, Food and Agriculture Organization (FAO), International Fund for Agriculture Development (IFAD), and other donors
Vision – Outcomes	A vision statement, with 5- and 10-year outcome indicators	Livestock Forum report, May 2015 LSSWG meeting, November 2015 Agriculture 2020 Roadmap for Democracy and Sustainable Socio-Economic Development (RDSSD) 2010-2014
Strategic Framework – Targets	Strategic components with indicators (current and target situation); and time-frame	LSSWG MOA
Activities and Outputs	Activities with specific outputs to achieve targets	LSSWG MOA
Implementation	Mechanisms for implementation; Scheduling	LSSWG MOA
Costs	Determine the financing requirements	LSSWG MOA

2 POLICY GUIDING THE PREPARATION OF THE FIJI LIVESTOCK STRATEGY

8. Agriculture, including livestock, makes up about 12 per cent of GDP¹. Over 60% of the rural population participates in livestock related activities. Fiji consists of a group of 330 islands with a total land area of 18,200 km², a tropical climate, and experiences tropical cyclone storms and heavy flooding, often during November to April. The 2007 Census recorded a population of 874,271 person with 51% living in urban areas and 49% in rural areas. Of the total population, 80% reside on the main island of Viti Levu, 16% on the second major island of Vanua Levu and just 4% on the Outer Islands.

9. Country economic and social development has been driven by the Republic of Fiji *Roadmap for Democracy and Sustainable Socio-economic Development 2010-2014* (RDSSSED), which sets out a strategic framework to achieve sustainable democracy, good and just governance, socio-economic development and national unity. Priorities for economic development include maintaining macroeconomic stability, export promotion, import substitution, raising investment levels, making more land available for productive and social purposes, and enhancing global integration and international relations.

10. Fiji's main exports of sugar, fish, crude coconut oil, root crops, and horticultural crops are facing stiff international competition. Fiji imports many of its basic food requirements including rice, meat, milk, the needs of the tourism sector and around 90% of the food lines in the supermarkets. There is also a challenge to produce the feedstock for biofuels to reduce the country's high cost of petroleum fuel importation. As the agriculture and other natural resources sectors have contracted in their share of total economic activity, other sectors have expanded.

6. The RDSSSED emphasizes two strategic objectives related to the promotion of agriculture and rural development:

- improve the availability of and access to nutritious locally produced foods for poor and vulnerable rural households; and
- increase rural incomes from both farm and non-farm income generating and employment opportunities.

11. The national goal envisioned in the recently formulated *Fiji 2020 Agriculture Policy Agenda* is to *build sustainable community livelihood through competitive exports and food security*. To this end, the sectoral policy objectives are to:

- build modern agriculture in Fiji as an organized system of producing, processing and marketing crops, livestock and aquaculture products;
- develop integrated production, processing, energy and transport infrastructure support systems for agriculture;
- improve delivery of agricultural support services;
- enhance capabilities to generate funds and investments through foreign investment, public private partnerships (PPPs) and other innovative business arrangements; and
- improve project implementation and policy formulation capability within the Ministry of Primary Industries and its partner institutions.

12. The 2020 Agriculture Policy prioritizes six livestock commodities – milk, beef, mutton, pork, poultry meat and eggs. This Livestock Strategy adds honey to the priority list.

¹ MOA, 2015. *Summary Report: Fiji Livestock Sector Forum Meeting*.

13. Preparation of a Livestock strategy was initiated at a Fiji Livestock Forum held at Nadi 12-15 May 2015 with participants from the private and public sector, livestock farming enterprises, and industry associations. The themed 'Livestock for Livelihoods – New Generation Thinking' objectives were to: (a) Raise awareness and share information on the changing landscape for livestock and key livestock constraints and opportunities for Fiji; (b) Formulate recommendations for the livestock industry in Fiji via a strategy document; (c) Raise awareness on the proposed Fiji Livestock Feed Bill; and (d) Raise awareness on the Fiji National Agriculture Policy 2020.

14. A LSSWG was appointed to guide the formulation process, and in October 2015 a consultant was appointed to draft and edit the Livestock Strategy through various versions. In February 2016 the Draft Strategy was put to a Validation Workshop which intensively reviewed and discussed the Draft, added details and comments, and officially validated the Strategy. This version of the Strategy is the culmination of the process.

15. The Livestock Strategy is aimed at re-energizing and modernizing the local livestock industry so that it is better able to meet the needs of the next generation in terms of production and consumption while also providing sustainable livelihoods for local farmers. It aims to promote production, innovation and research including use of the skills, and resources of the private sector, and aims to strengthen linkages to domestic, regional and international markets.

3 LIVESTOCK SECTOR SITUATION, TRENDS AND ISSUES

16. The agriculture sector as a whole contributed 7.6% (\$ 485.4m) of Fiji's total GDP in 2014², declining from approximately 16% in the 1990s. The sector employs close to two thirds of the labor force. Recent challenges have included the decline in the sugar industry, inability to cope with trade liberalization, natural disasters, pest and disease outbreaks, export trade restrictions, political instability and inconsistent public sector support. Agriculture, forestry and marine ecosystems are under threat from increasing population pressure and the adverse effects of climate change.

17. Livestock contributed \$48.3m to total GDP, with a declining growth rate of -3% from 2010-2014. Sheep, goats, beekeeping and egg production share of agriculture GDP did not show much change in this period, however milk production declined by half 2011-2013 but has since resumed growth. Production of cattle and pigs fluctuates.

3.1.1 Subsistence Farming

18. The share of subsistence farming and sugarcane production has shrunk in the economy, while the shares of other crops and livestock (beef, dairy, pork, poultry, goat and bee stocks) have increased to contribute an average of 6.8% of GDP over the past decade, indicating a gradual transformation from semi-subsistence to semi-commercial farming.

19. The MOA has traditionally given considerable support to subsistence farming in recognition of its important role in rural livelihoods, in household food security especially in remote and outer island areas, and in providing resilience to rural communities in times of natural disaster and economic shocks. However, providing this support to subsistence has weakened the MOA's ability to achieve improved outcomes related to commercialization, production of marketable surplus, livestock industry growth and competitiveness against imports. Under Fiji's national plans, other government agencies are also tasked with social

² S. Krisitiana 2016. *Fiji Livestock Sector Inventory*. Presentation to the Livestock Validation Workshop 17-19 Feb 2016. Fiji Agriculture & Rural Statistics Unit, Economic Planning & Statistics Division, MOA

security, livelihoods, community development and regional development. This Strategy suggests that government should focus MOA services more towards commercial farming, while other Ministries take the lead in rural and community development, livelihoods and associated social services, while MOA acts in a supporting role, for example providing training and advisory support for programs under a memorandum of understanding with the lead Ministry. This may include a shift in some budget from MOA to other Ministries responsible for poverty alleviation, women, youth, employment, and food related health initiatives.

3.1.2 Livestock Production

20. The value of the livestock sector at farm gate³ is around \$200m annually. This figure would increase substantially if post-farm processing was included (Figure 2).

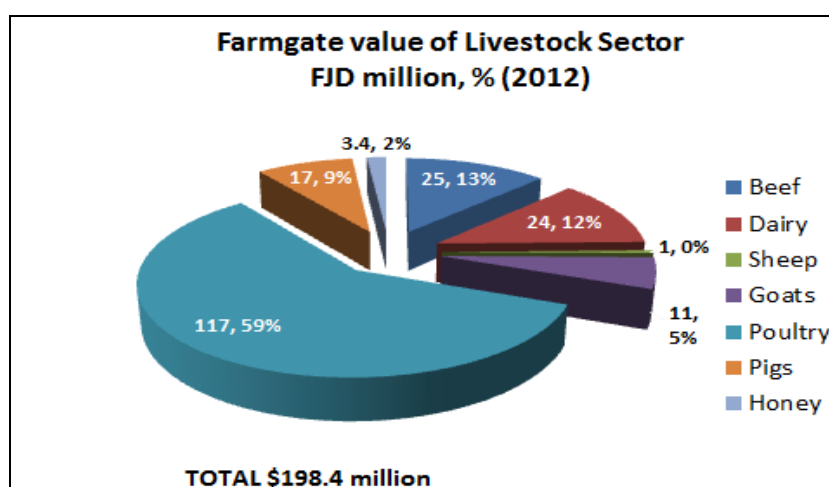


Figure 2: Farm Value of the Livestock Sector

21. Livestock contributed \$48.3m to total GDP, with a declining growth rate of -3% from 2010-2014. Beef production contributes the major share of livestock industry value, and shows an increasing trend (Figure 3). Sheep, goats, beekeeping and egg production's share of agriculture GDP did not show much change during this period. Dairy production declined by half (from 2011-2012) but has since resumed growth (from 2013-2014), showing a 7% overall growth in this period. Production of cattle and pigs fluctuates.

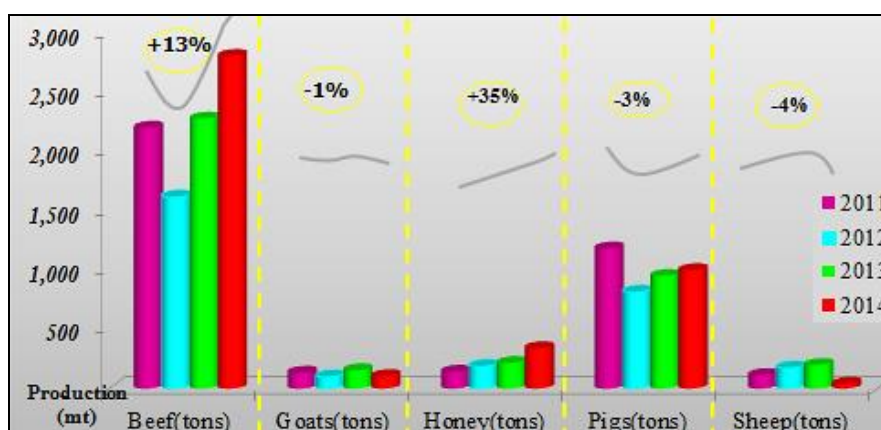


Figure 3: Livestock production trends

(Source: AH&P Quarterly Reports)

³ Farm gate value is an economic estimate including production for cash and non-cash sales and formal and traditional (*magiti*) consumption.

22. Erratic production is due in part to the sector's vulnerability to natural disasters, economic and political shocks; the latter which have characterized Fiji's economy for about three decades. Production is also limited by the generally small farm scale. Many farms classed as commercial in the 2009 Agricultural Census are relatively small and will be marginally viable without other income. For example, according to the census, the average commercial beef herd has 18 animals, and at 40% calving rate this means only 3 animals might be sold each year. There are however many larger commercial farms producing pigs, poultry, dairy and beef. Growth in the number of farms is evident across all species with pig, poultry and beef standing out (Figure 4). While the growth in number of beef farms is paralleled by growth in cattle herd numbers, the increase in the number of farms with pigs is probably due to small subsistence farmers since the number of pigs has remained static.

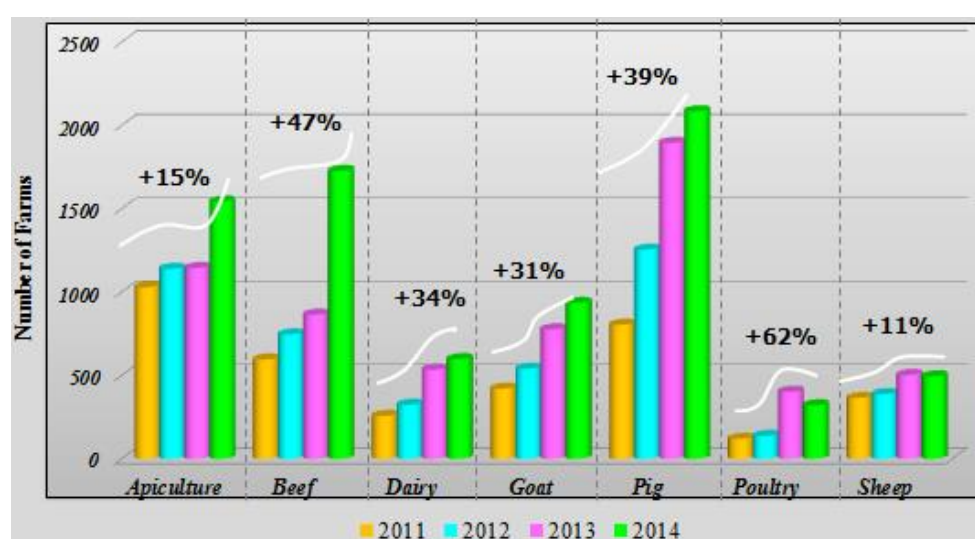


Figure 4: Number of farms 2010-2014

(Source: AH&P Quarterly Report)

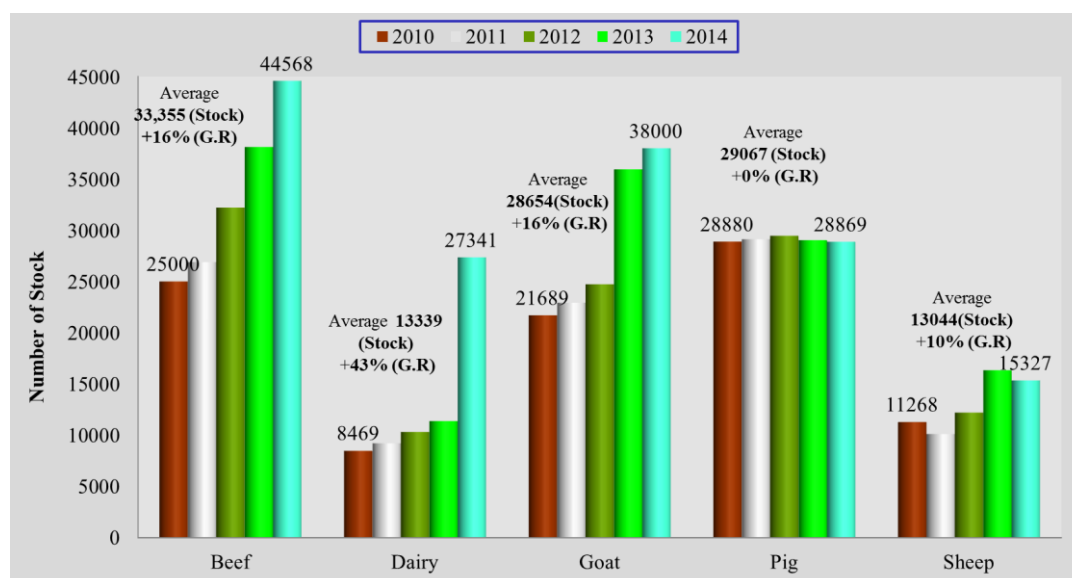


Figure 5: Number of livestock 2010-2014

(Source: AH&P Quarterly Report)

23. Knowledge and capacity to manage livestock diseases are vital to sustainable production. For example, the brucellosis outbreak on several dairy farms in Tailevu in early 2009 also saw cattle and dairy farmers suffer losses which will continue until all affected cattle are culled. There are many other animal health and disease issues that affect

productivity; some can be prevented or mitigated by better practices, husbandry, nutrition, and commercially available treatments that farmers can apply themselves as preventative measures rather than relying on veterinary attention once an animal is in a critical condition.

3.1.3 Consumption, Trade Competitiveness and Food Security

24. Consumption of livestock products shows an increasing trend (Figure 6), driven by rising incomes, better standards of living, increased changes in consumer preferences, increases in international visitors and increasing consumption by intermediate industries especially food processors. Poultry and sheep meat are dominant in consumption, probably due to the high volume of relatively low price, lower quality imported cuts (Figure 9).

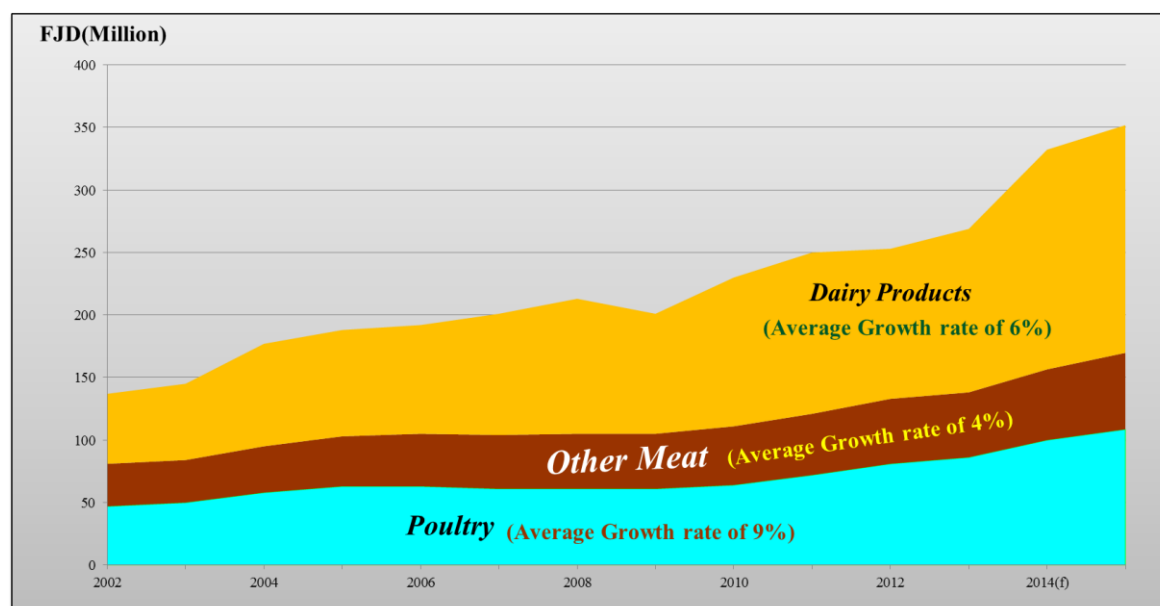


Figure 6 : Livestock products consumption trend

(Source: EP&S, MOA)

20. In terms of self-sufficiency (ratio of domestic production to overall consumption), poultry stands out as nearly meeting domestic consumption (Figure 7). This increase in poultry production has required the import of significant quantities of cereal grain, estimated to be in the order of 15,000-20,000 tonnes/annum, which contributes to the high and increasing proportion of agricultural products in total merchandise imports, in addition to milling grain and other produce for human consumption including meat and offal for domestic manufacture of canned corned beef. Total import value of livestock products has been steadily increasing (Figure 8). The proportion of imports shows a trend to increasing dairy imports, whilst sheep imports have declined and beef imports have remained relatively constant. According to FDB, Fiji needs an estimated 80 million liters of milk per annum to meet domestic demands of which, the local dairy industry only produces between 10 to 12 million liters annually⁴. The shortfall of 68 to 70 million liters is catered for through imports; indicating an import substitution opportunity for local dairy farming even at current productivity levels. Meat trade balance shows substantial opportunity for import substitution in sheep, goat and beef (Figure 9).

⁴ FDB. www.fdb.com.fj/pages.cfm/about-us/news/2011/milking-money.html

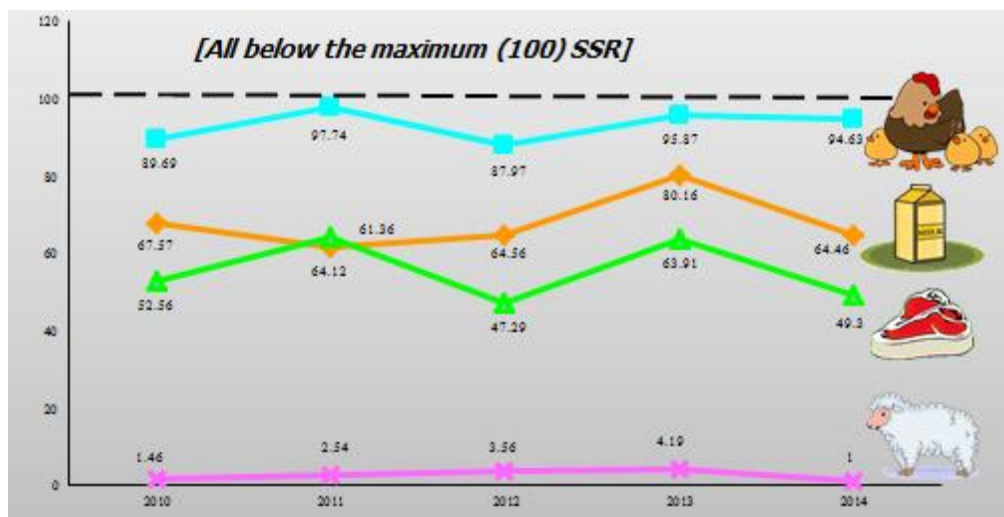


Figure 7: Self-sufficiency

(Source: EP&S)



Figure 8: Trend in livestock imports

(Source: Fiji Bureau of Statistics)

Table 3: Trend in Value of Livestock Imports 2000-2008 (Current FJ\$ million rounded)

Product	2000	2001	2002	2003	2004	2005	2006	2007	2008*	%
Beef	7.1	7.1	8.1	8.9	9.7	10.6	10.7	8.7	9.5	10
Goat	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.15	-
Sheep	22.2	25.9	24.8	26.0	28.6	29.5	30.9	29.5	23.3	24
Pigs	1.6	0.7	2.2	1.6	1.6	1.9	2.2	0.9	1.0	1
Dairy	17.4	29.0	23.7	26.6	34.0	32.0	31.3	46	59	61
Poultry	4.0	6.7	2.7	2.8	6.7	8.5	6.3	4.2	3.7	4
Eggs	2.6	3.9	4.0	3.4	1.6	2.1	4.3	?	0	-
Honey	0.1	-	-	-	0.1	-	0.08	?	0.3	-
TOTAL	55.1	74.4	65.6	69.5	82.4	84.7	85.9	89.5	97.0	100

Source: Feasibility Study of Agricultural Diversification for the 2000-2006 data and based on trade statistics for 2007 and 2008, with beef adjusted for re-export as canned beef and milk for infants excluded. *Some discrepancies in MoA import data for dairy, beef, sheep and poultry meat compared to import statistics data.

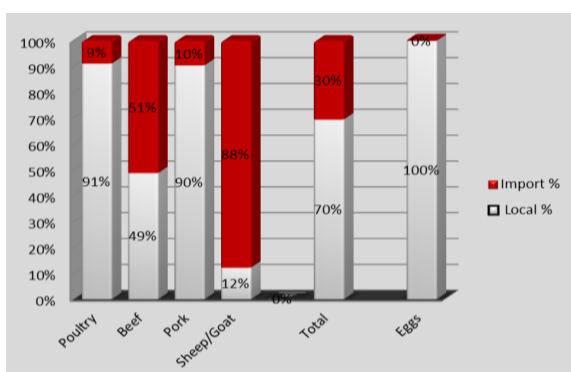


Figure 9: Meat trade balance

(Source: S. Cole 2016. *A look at the Pacific Region Meat Supply*. Fiji Livestock Strategy Validation Workshop)

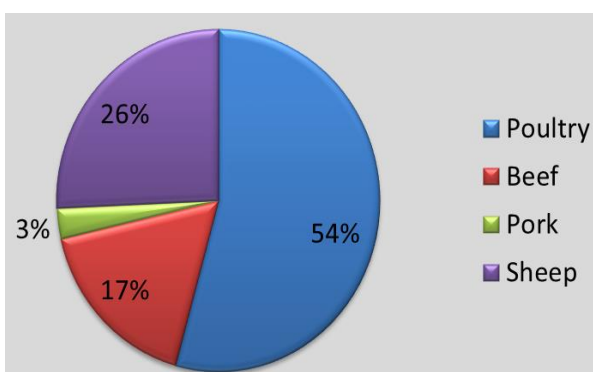


Figure 10: Meat consumption

25. Trade negotiation is framed by the Pacific Agreement on Closer Economic Relations (PACER Plus), launched at the Pacific Islands Forum Leaders meeting in August 2009. Negotiations include elements of capacity building and trade development assistance⁵. By late 2014, negotiations had largely been completed on phytosanitary measures, technical barriers to trade and customs procedures, which will provide clearer pathways for trade in agricultural products. Concerns from non-state actors have highlighted the need for Forum states to recognize that their national laws protect them from foreign investment-driven land grabs, threats to food security and rural livelihoods, and loss of policy space for nurturing local industry and employment⁶. There have also been concerns that problems relating to food security and increasing poverty, mainly at the grassroots level, will increase if Pacific Island economies totally commit to the requirements of the World Trade Organization (WTO) Agreement on Agriculture. Technical assistance and capacity building therefore have a role to play in enhancing the Forum countries' ability to benefit from PACER, for example through: (i) assistance in meeting customs requirements; (ii) improving trade infrastructure (roads, ports, treatment facilities); (iii) regional training colleges (and recognition of qualifications); (iv) food safety, organic and fair trade certifications; and (v) implementing regional marketing initiatives. The Forum countries have requested Australia and New Zealand to provide them with assistance to implement PACER Plus obligations, and to address the local agricultural supply-side constraints which have mitigated their efforts to increase and diversify their trade⁷.

26. Several trade agreements currently being negotiated by the Pacific Island countries are likely to have a big impact on future ability to address non-communicable diseases (NCD), including PACER Plus and the Economic Partnership Agreements (EPAs) with the European Union. For example, reductions in tariffs on unhealthy products such as fatty meats, tobacco and alcohol could lower the prices of these products, contributing to obesity, diabetes and heart disease⁸. The Livestock Strategy needs to contribute to better outcomes from trade agreements to avoid restricting governments from introducing policies and laws to address NCDs, such as bans on certain products, restrictions on food labelling, etc.

⁵ Department of Foreign Affairs and Trade, Government of Australia. Canberra
<http://www.dfat.gov.au/trade/agreements/pacer/Pages/pacific-agreement-on-closer-economic-relations-pacer-plus.aspx> accessed 19 March 2015.

⁶ OXFAM 2010. Forum States non-state actors meeting, October 2010.
http://www.forumsec.org/resources/uploads/attachments/documents/Oxfam_Australia_Presentation.pdf

⁷ Sixth PACER Plus Trade Officials and Ministers Meeting, Port Vila, April 2014. Pacific Islands Forum Secretariat.

⁸ UNDP, 2013. Proceedings of the Sub-Regional Workshop on "Trade, Trade Agreements and Non-Communicable Diseases" held in Nadi, Fiji Islands, 11-14 February 2013

27. The Reserve Bank of Fiji (RBF) sees agriculture as helping to reduce imports and narrow the trade balance⁹. The quality and consistency of supply are important. Opportunities include exports, spare capacity, international compliance, reducing imports and value adding. Challenges include the high cost of doing business, a shortage of skilled labor, low productivity, limited access to finances, impacts of disasters, over-regulation vs under-regulation (as with biosecurity), resistance to change, pricing and marketing, land (size, location, infrastructure) and transport.

28. Livestock provide both income and food security at the household level to a greater or lesser extent across all communities in Fiji. The livestock sector is complex with consumption patterns influenced by ethno-religious categorization and wide differences between the volumes handled in formal and informal markets. The informal market (*magiti*) is something in the order of 30% for total meat products and almost 90% for cattle/beef and for pork, utilizing the opportunity to sell the product directly to the *magiti* (feast) market which attracts retail margin direct to the farmer. Selling animals to butchers via the abattoir reduces the margin to the farmers. There is currently limited opportunity to differentiate Fijian produced meat products on a quality basis and therefore the domestic livestock sector (with the exception of poultry) is not able to satisfy the quality and safety demands of the growing tourism sector.

29. It is important to emphasize that for meat products, whole animals are not imported, but only parts (often the best for tourists and the worst as virtual waste products from the exporting country) at prices that local whole animals cannot compete with. This presents a real problem in terms of disposing of the “middle” of the carcass if all production was domestically produced.

30. Domestic and international markets are increasingly demanding the livestock industries to operate under internationally compliant standards for food safety and animal welfare. Without meeting these standards – which are consumer-driven – imports will keep increasing since domestic products will not be competitive in the high-end, tourism and institutional local market segments. Experience from abroad indicates that livestock products that have been grown and slaughtered under hygienic and appropriate welfare conditions not only are healthier but taste better and have a longer shelf life¹⁰.

31. Food safety is critical to improving competitiveness in markets as well as driving commercial best practices. Apart from regulatory and monitoring improvement, animal and meat traceability systems, it requires skills (including farmers keeping records of all livestock diseases and treatments, an available workforce of qualified meat inspectors and food safety auditors), as well as considerable investment in hygienic infrastructure (e.g. processing and cold chain facilities).

32. Estimates of growth potential have been made by the LSSWG based on historic performance, trade balance trends, and herd status (Table 4).

⁹ MOA 2015. *Livestock Forum Draft Summary Report*. Presentation notes from Livestock Forum held at Nadi, May 2015

¹⁰ Meat and Livestock Australia standards are based on findings that indicate hygienic, low stress conditions for animals during their life and at slaughter result in meat that has lower bacterial counts, more balanced pH therefore longer shelf life, and is more tender, than stressed livestock. Similarly for dairy products the levels of fat, protein are higher, bacterial counts lower, and potential allergens lower.

Table 4: Estimated Growth Potential

Product	Growth potential	Comment
Beef meat	50%	Based on FMIB historic throughput. Impact of brucellosis and TB culling is recognized.
Dairy milk	At least 20% to meet domestic demand	Culling out TB-infected stock will reduce herd in the near future. Currently 80% import of combined dairy products (cheese, yoghurt, ice cream, etc.)
Pork	25%	Import substitution. Further potential to export to other MSG countries.
Lamb	100% at least	Sheep herd is small and cannot be expected to grow fast. Sheep and poultry meat are substitutive products to some extent in the Fijian market.
Poultry	Limited growth	Heavy competition from cheap imports from USA in the region.
Goat meat	100%	Based on import substitution.

Notes: FMIB = Fiji Meat Industry Board; TB = tuberculosis; MSG = Melanesian Spearhead Group;

3.1.4 Productivity

33. Productivity in both the larger commercial farms supplying the formal market and amongst smallholders can be significantly improved. Stock off-take, milk production, and growth rates can all be significantly improved. Significant yield gaps exist within the country (Table 5).

Table 5: Indicators of Productivity

(Source: Agricultural census 2009; and industry estimates)

Productivity Measure	Average commercial	Fair Potential
Milk per cow, daily	8 liters	10 liters
Lambing rate per ewe	1	1.5
Calving rate	43%	80%
Piglets sold per sow, per year	14	17

34. Commercial livestock farming, particularly grazing, is historically confined to wetter areas of main islands or peripheral to cane on marginal land in the cane belt. Cattle grazing in cane areas within the existing cane lease areas plus additional opportunistic grazing are mainly for milk production or maintenance of working bullocks, which at culling, find their way to the abattoirs or are slaughtered at home. There is considerable opportunity for irrigated fodder-based livestock production in the drier areas including dairying. In addition there are the poultry and pig industries based on the present supplies of feed by-products available (wheat bran, coconut meal, protein meals and molasses) plus a large quantity of imported feed cereals. By-products from the established sugar cane sector (sugar cane tops), cassava skins and other items are utilized to formulate low cost feeds.

35. The dairy industry operates with a range of large and small farmers supplying milk at wholesale prices to a small number of central manufacturers. The dairy industry has been heavily subsidized, but has recently seen changes in private sector ownership.

36. Agricultural value added (Figure 11) has been gradually but erratically improving, now up around the same high level that it was prior to the most recent political coup, indicating a strong link to investor and consumer confidence.

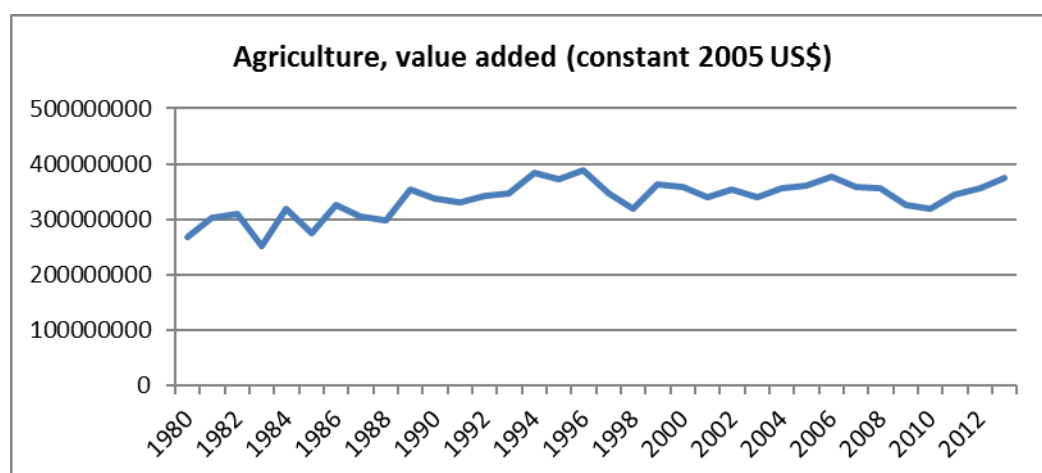


Figure 11: Agricultural value added
(Source: World Bank metadata, accessed 17 Nov. 2015)

3.1.5 Livestock Feeds

37. The livestock industry suffers from the high cost of imported feeds and limited development of local feed resources. There is limited knowledge of feed ration formulations using local resources in a viable manner, and this needs research under commercial conditions. The industry has also raised concerns about the food safety and truth in labelling of the quality of feeds milled in Fiji – particularly the content of protein. There are limited facilities available to analyze feed composition. In response, the Government is considering ways to regulate the supply of animal feed to ensure compliance with feed quality and safety standards. This includes Hazard Analysis Critical Control Points (HACCP), Good Manufacturing Practice (GMP), and monitoring of contaminants in animal feeds via the Livestock Feed Bill for Fiji. The draft Feed Bill is positive in that growers of feedstock (e.g. cassava or agro-processing by-products) are not regulated, covering only the importers and processors of feed. Although this regulatory action would comply with Fiji's membership of the World Organization for Animal Health (OIE), a legislative negative approach may not be necessary – a positive alternative is to establish voluntary certification of feed quality based on random testing by an independent competent authority (e.g. MOA). In this approach, participating feed suppliers can request MOA to randomly test their feed products and provide certification of compliance. Buyers then have the choice to buy tested and certified feeds or not. The system is voluntary, the onus is on the buyer to choose certified feed, small suppliers of raw materials are not excluded, but financing the testing is essential; costs may be subsidized by government with the subsidy being phased out gradually.

3.1.6 Innovation

38. Despite small numbers of MOA agricultural extension staff (including research and other staff who interact with farmers) compared to the large numbers of farmers, more than a third of surveyed farmers have been visited by an agricultural officer (Table 6). This suggests that MOA has adequate mobility and facilities to reach farmers, and that there has been considerable effort to reach small farmers. However, only 9% of farmers attended a field day – this low level suggests little interest by farmers, few field days or perhaps inappropriate technology for small farmers is presented in field days – but either way, it suggests more demand-driven and innovative approaches could be used, and that perhaps small farmers should no longer be the primary clients for MOA services.

Table 6: Farmer participation in Agricultural Extension (reported by farmers)

(Source: 2009 Agricultural Census Report, MOA)

Extension Type	Number of farmers	% of total farmers
Visited by an agricultural officer	22,348	34%
Visited an agricultural office	16,820	26%
Attended a field day	5,835	9%

Table 7: Farmer adoption of Technologies

(Source: 2009 Agricultural Census Report, MOA)

Technology	% of total farmers with technology
New variety introduced	11.4%
New livestock breeds introduced	2.8%
Using chemical fertilizers	43.9%
Practicing organic farming methods	8.4%
Farms requesting a loan for technology	6%

39. The uptake of new technologies is very low, despite MOA, agribusiness and private sector input suppliers providing new crop varieties and breeds (Table 7). A stronger focus on commercial farms may generate greater interest and impact. While the LSSWG note that government funding for pasture and livestock research has been low, research and development is wasted if it is not disseminated and adopted by farmers. While using fertilizer is not a new development, the assumption is that farmers who use fertilizers have adopted the practice in recognition that buying this technology increases their production – an indication that these farmers have at least basic understanding of profitability. The observation that 8.4% of farmers are practicing at least some organic farming techniques indicates that the recent awareness campaign of organic farming has been at least partially effective, and that there is potential to develop. Consultations with both farmers and MOA staff indicate limited understanding of good organic farming practices – many people still think that organic farming means no fertilizer and no animal health controls, which is absolutely incorrect – international organic standards require farmers to have effective practices for soil fertility, animal nutrition and health, and there are a wide range of husbandry techniques and proprietary products and technologies available. However, there are excellent examples emerging, such as Eseta's Farm, which is using local breeding crosses to improve resilience, productivity, and respond to consumer demand for taste (in a research partnership with MOA), and growing cassava and other crops for pig feed, fertilizing the crops using piggery manure in a closed organic recycle. Other successful organic-based farm models include rangeland goat farming with locally sourced supplementary feeds.

40. A recent innovative market development activity is the Pacific Agri-Tourism Week: Linking Farmers to the Tourism Market¹¹. The tourism sector is growing and there are significant challenges in setting up local supply chains to meet the high demand. Adequate regional and national support, and pooling of resources, can help producers to meet these demands. Common themes from agri-tourism include the need for quality seeds and feed, the need for a marketing hub and a lack of local livestock products for chefs.

¹¹ MOA 2015. *Livestock Forum Draft Summary Report*. Presentation notes from Livestock Forum held at Nadi, May 2015

41. In the past the Fiji Inland Revenue and Customs Authority (FIRCA) has given 150% tax deduction status for qualifying research and development expenditure. This incentive mechanism has been proven successful abroad. Another stimulus approach common in regional developed countries is allowance for tax deductible levies on farmers' funds deposited into registered research and development funds¹² which are matched by government. The funds are managed by industry-owned non-profit structures. An important result from this modern financing structure is that it is led by industry, and forces research providers to be responsive to industry. All research providers (including government and universities) need mandatory endorsement of all research proposals and also sign-off approval of research project completion (including results dissemination) prior to release of final payments to research providers.

3.1.7 Demographics

42. Fijian farmers are similar in age to many other countries, with most in the 20-60 age group due to the need for farmers to have adequate capital and access to land. There is however considerable potential to improve the number of young farmers and number of women farmers (Table 8). With 44% of under 20 aged young farmers relying on farm income, it is clear that farming is an important source of livelihood for youth. Very few farmers have attended an agricultural college, suggesting there is as yet little development of professionalism in farming. No women farmers have attended agricultural college – indicating that few female college graduates get employment in agricultural services or other jobs. Women represent 12% of livestock farmers in Fiji, and there are over 15,000 paid female farm workers.

Table 8: Farm demographics
(Source: 2009 Agricultural Census Report, and 2012 Statistics)

Demographic	Number of farmers	Percent of total	No. having farm income >75% of total income (% of total no. of farmers)	Agriculture college education
Farmers aged under 20 yrs	592	9%	263 (44%)	0
Farmers aged 20-60 yrs	50,500	75%	20,521 (40%)	420 (0.8%)
Farmers over 60 yrs	10,217	16%	3,924 (38%)	79 (0.8%)
Female farmers	2,207	3.6%	n/a	0
Female paid farm workers	15,080	7%	n/a	n/a
Male paid farm workers	60,322	28%	n/a	n/a

3.1.8 Agricultural Infrastructure

43. Agricultural infrastructure includes facilities for market access which are mostly public investments but include some private investments (farm roads, jetties, cold collection centers), and downstream value adding facilities are mostly privately owned or under public private partnership, for example packing and processing facilities (for dairy, meat and eggs). Investment in rural transport infrastructure has been financed by government in some cases with assistance from ADB, World Bank, European Union (EU) and People's Republic of China (PRC), but with the large number of islands and remote topography there is still great need. From mid-2015, the amended Meat Industry Act requires livestock to be taken to rural

¹² See for example Meat and Livestock Australia, www.mla.com.au

slaughterhouses before shipment to either the Fiji Meats Industry Board abattoirs in Viti Levu (Nasinu or Vuda Point). This means there is an increased need for small abattoirs in outer islands, which only exist in Vanua Levu at present.

3.1.9 Access to Finance

44. There has been a sharp decline in lending for agriculture. In 1993, sugarcane growing and other agriculture lending was \$120 million but fell to \$14 million by September, 2012¹³.

45. The FDB describes its role as catalyzing growth with an interest in promoting economic development¹⁴. Agriculture comprises 30% of FDB's overall lending, with FDB's livestock Agriculture and SME loans designed for individuals and small farmers¹⁵. The loan product range for livestock farming includes livestock (beef, dairy, poultry, goat and piggery), farm purchase, farm development and other agricultural projects. FDB's portfolio holds mainly poultry (60%), cattle/dairy (30%) and other livestock (9%). FDB agricultural loans have terms from 8 to 15 years, maximum loan typically \$50,000 (based on debt serviceability), with flexible repayments, and security requirements which may include crop lien, livestock, machinery, vehicles, equipment and other security. MOA may be able to add knowledge of productivity and risk assessment which will help the Bank to develop appropriate and more flexible loan products. Opportunities for lending are mainly focused on areas which generate revenue, i.e. in commercial agriculture.

46. FDB's Dairy Farm Loan allows eligible farmers to borrow for land purchase, and development, build or renovate farmhouses, purchase new or used farm vehicles, plant equipment and implements as well as stock for milk production. FDB suggests that dairy farming carries an enormous potential for financial returns provided certain fundamentals are in place first such as security of land tenure, adequate land and good grazing pasture, consistent supply of supplementary feed, good water supply, mechanized milking sheds, and absence of bovine tuberculosis and bovine brucellosis amongst the stock.

47. Constraints to finance that FDB identify include lease documentation (new and extended), remoteness, poor financial literacy and management practices, and risk of disasters. The relatively high cost of the Fiji dollar is an issue for some farmers who import equipment and raw materials. Possible solutions include reviving the financial literacy training program for farmers, access to services, financial training and technical assistance.

48. An agribusiness culture has not been strongly developed, in particular with the large *iTaukei* assets. There is scope for greater vertical integration of producers into processing and marketing, in particular through equity finance or cooperative financing approaches.

49. Investment Fiji was created in 1980 under the Economic Development Board Act No. 11 to promote, stimulate and facilitate economic development in Fiji. Investment Fiji suggests that potential exists in the Livestock Sector for:

- Animal Feed Supply, using local resources from existing industries;
- Dairy Farming; and
- Production and supply of organic farm inputs.

¹³ Source: EP&S, MOA

¹⁴ MOA 2015. *Livestock Forum Draft Summary Report*. Presentation notes from Livestock Forum held at Nadi, May 2015

¹⁵ FDB 2016. Agriculture and SME loans. www.fdb.com/fj/pages.cfm/our-products/ accessed 10 Feb 2016

50. Agriculture sector investment incentives include:

1. *New Businesses from 2009 onwards*: the income of any new activity in commercial agricultural farming and agro-processing approved and established from 1 January 2015 to 31 December 2018 shall be exempt from tax as follows:
 - capital investment from \$250,000 to \$1,000,000, for a period of 5 consecutive fiscal years; or
 - capital investment from \$1,000,000 to \$2,000,000, for a period of 7 consecutive fiscal years; or
 - capital investment above \$2,000,000 for a period of 13 consecutive fiscal years.
2. *Commercial Agriculture and Agro-Processing*: the importation of all agricultural items will be subject to zero duty.

3.1.10 Access to land

51. The majority of farms are not of sufficient size to be commercially viable for livestock. Nearly half (44%) the number of farms are less 1 ha in size, more than 35% are less than five hectares (commercially viable for intensive farming of poultry or pigs), 19% could be described as medium-sized or larger (potentially viable for dairy, goats or beef), and only 0.2% of farms over are over 100 ha.

52. Less than 10% of land is privately owned. The control of native lands is vested in the TLTB with the Board facilitating socio-economic development. The TLTB facilitates the leasing of native land and distributes funds, but does not operate a development fund. There are currently just over 39,000 leases of native land. The TLTB has a register of property deposited in the Land Bank which are managed by TLTB, but the majority of this is not arable. Constraints include applicants not meeting lease requirements, lease charges, land ownership mentality, illegal dealings with landowners, non-compliance with leases, land disputes, poor infrastructure and a lack of enforcement amongst stakeholders¹⁶. For land leases, 60% of the landowner *mataqali* must approve. Part of the issue is awareness of opportunities for increasing lease revenue and more profitably managing their land estates. Solutions include assistance from financial institutions, ensuring fair returns to landowners, penalties by the TLTB, dispute resolutions, and the power to acquire native land for public purposes after fair compensation. Training and exposure to corporate agribusiness operation has empowered and stimulated clan-based native land owners in New Zealand and elsewhere, but to some extent has been successful only in the tourism and residential housing sectors in Fiji.

3.2 Summary of Issues

53. Consultations of stakeholder groups at the Livestock Forum in May 2015 identified some key constraints, proposed strategies and suggested agencies that may have a role in implementation (Table 9). A lot of thought and discussion has been given to result in the range and depth of suggestions, and each of these issues and strategies have been incorporated into the Strategy framework goals and activities.

¹⁶ MOA 2015. *Livestock Forum Draft Summary Report*. Presentation notes from Livestock Forum held at Nadi, May 2015

Table 9: Summary of Feedback from the May Livestock Forum

Major ISSUES	General STRATEGIES	Possible RESPONSIBLE AGENTS
Skills and competency are limited	Skills training and capacity building	MoA (Farm Management) FNU FDB FCLC, Industry Associations
Access to capital is difficult	Improve access to capital	FDB MOF Northern Development Programme
Animal feeds: import cost, local quality	Develop domestic feed industry Reduce import costs	Industry Associations MOA FNU Agribusiness
Support services issues: animal health and genetics; regulations, standards and compliance; production and processing costs	Improve service delivery	FCLC FMIB MOA, MOT Agribusiness, Industry Assn. AMA
Access to land is constrained	Improve access to land	MOA, Associations TLTB
Business enabling environment - Compliance to law (e.g. theft, Food Act)	Monitoring, awareness, enforcement New legislation or voluntary compliance with existing Truth in Labelling law	MOA, FCLC Ministry of Justice
Lack of infrastructure	Development infrastructure	MOA Associations
Declining competitiveness in local markets	Improve domestic industry competitiveness	MOT, MOF FIRCA
Natural disasters and climate change	Risk management, adaptation and response	MOA NDMO MOFA SPC

3.3 Experience from Government Interventions

54. Government support to the livestock sector over the past 30 years has supported both smallholder and large scale farming enterprises, but with only partially successful impacts (e.g. the scale of the livestock industry has been more or less maintained). Mechanisms for this support have relied on grants (e.g. via EU support for sugar industry reform), infrastructure developments (e.g. multilateral bank loans) and subsidy support schemes (e.g. dairy) combined with biosecurity-based protection (e.g. honey). The small grants support has assisted the transition of some farmers from semi-subsistence to commercial production, but a wider impact has been constrained by limited knowledge of

technical skills, experience in farming as a business, lack of capital and security, lack of secure access to land, and gaps in value chains.

55. Government has recognized the contribution of the large commercial farms and has engaged in large scale livestock production in the dairy and beef and sheep sectors, as well as focusing on development of the smallholder farmer sub-sector in recent years. Recent policies to privatize parastatal large scale dairy, beef and sheep farms, owned through the Ministry of Public Enterprises and Public Sector Reform, have been reversed and large beef and sheep farms remain in government hands, aiming to support breeding and multiplication services to the industry (especially smallholders). Some stakeholders suggest that, in private sector hands, productivity and numbers of breeding stock available would be increased.

56. Government has also recognized the importance of private sector development in poultry and pigs with minimal government support. Recent ISP grants have attracted small semi-commercial farmers but it is too early to determine whether such measures will create sustainable farms. In the dairy sector, grants, subsidies and the provision of market infrastructure (chilling centers) for dairy farmers in the Central Division have encouraged new entrants, but these measures have not yet managed to establish farms on a viable sustainable basis. This represents a major issue within the livestock industry at present and a priority for transition to more viable structures.

Table 10: MOA targeted support programs

(Source: Agriculture 2020)

Farming Assistance Scheme Program
Drainage and Flood protection Program
Water shed management Program
Irrigation Program
Export Promotion Program
Import Substitution Program
Rural and Outer Island Program
Sigatoka Valley Improvement Program
Dairy Industry Support Program
Quarantine Awareness Program
Livestock- Extension Service Program

3.4 General Lessons learned

Experience in Fiji and lessons learned from other agricultural development initiatives in the Pacific, include the following.

- Preparing strategy to develop the agriculture sector should be based on participation of farmer organizations, private sector, food industry, input suppliers, and government and farming communities.
- Government does not have the resources to develop the industry on its own. Partnerships with other organizations active in the sector have been an effective means of implementing activities to reach mutual goals.

- The focus of the government and industry organizations should be on core mandates, with clear mechanisms set up to secure and sustain access to resources (through e.g. regular budget mechanisms, specific government grants or industry levies and fees) – not on *ad hoc* projects.
- To encourage growth and maturity in the private sector and self-sustaining industry organizations, government should avoid competing with them – “create commercial space”. One way of doing this is for government to design service packages for farmers that have specific outputs (e.g. a tailored, individual farm plan for paddock fencing, watering points, races and cattle yard) and inputs (on-farm assessment and consultation, in-office research and write-up). In time these packages may be provided on a fee-for-service basis, and subsequently handed over to industry organizations or private sector.
- Transition to commercial agriculture requires improved farm management, business literacy and marketing knowledge and skills amongst farmers, advisors, and input suppliers. This may seem obvious, but most farmers and advisors focus on technical knowledge for production, but not managing cash flow, profit margin, and marketing.
- Modern, commercial agri-food logistics and marketing are increasingly demanding farmers to be part of reliable supply chains with built-in food quality and safety systems. The driving factors are reducing losses, integrated packaging and handling, reliable supply that meets retailers’ better knowledge of demand in terms of timing and volumes, assurance of agreed quality specifications, and consumer health and safety.
- Regulation may be achieved through compulsory or voluntary compliance. While compulsory regulation usually requires greater surveillance and administration by the public sector for enforcement, voluntary compliance can be achieved through industry self-management with much reduced cost to the public sector.
- When an industry is in transition, the job descriptions, performance incentives and approach of service providers (e.g. MOA) may not reflect the emerging requirements for skills, knowledge and practices. Annual workshops to review trends and self-evaluation can provide feedback to stay current.

3.5 THE PROCESS OF AGRICULTURAL TRANSFORMATION

57. The Strategy is expected to guide the livestock sector of Fiji over the next 20 years. During this period, the structure of the sector will change considerably and agribusiness and non-farm rural activities will grow. The strategy is formulated to facilitate the transformation of rural Fiji from ‘farming by default’ (i.e. because there are no other livelihood options available) to more opportunities in services and industry. Strengthened linkages between agriculture and other sectors will be critical to the reduction of rural poverty, the growth of a robust livestock sector, employment generation for youth, improved roles for women, and risk management in the context of increasingly more severe climate change related events.

58. The strategy considers the livestock sector in its complexity, encompassing not only production, but also the processing sector, trade and other services (storage, transportation and logistics, finance, marketing, research and extension).

4 STRATEGIC VISION AND OUTCOME GOALS

4.1 The Vision

59. The policy goals of the Strategy are to:

- Sustainably grow, expand and diversify the livestock sector;
- Promote innovation within the sector;
- Foster close public-private collaboration amongst stakeholders;
- Position the livestock sector so that it is able to meet the aspirations of the sector and the next generation, in Fiji's changing agriculture landscape; and
- Maximize the economic return of the livestock sector in Fiji's economy.

60. The LSSWG, facilitated by the consultant, formulated a Livestock Sector Strategy Vision Statement at a meeting on 10 November 2015. The vision statement draws on: (i) the sector wide vision **“a diversified and economically and environmentally sustainable agriculture economy”** (*Agriculture 2020*); and (ii) the national vision **“Sustainable community”** (*Roadmap for Democracy and Socio-Economic Development*).

61. The core objectives of Agriculture 2020 are to:

- a) Build modern agriculture in Fiji as an organized system;
- b) Develop integrated infrastructure for agriculture;
- c) Improve delivery of agriculture support services;
- d) Enhance capabilities to generate funds and investment through foreign investment, public private partnership, and other innovative business arrangements; and
- e) Improve implementation and policy formulation capability.

62. The draft Livestock Strategy Vision Statement is:

“The livestock sector, led by industry and government, will comprise modern, competitive value chains that are sustainable, resilient and diverse, providing livelihood opportunity for youth and women, and contributing to economic growth and food security.” (*Fiji Livestock Sector Working Group*).

4.2 The Outcomes of the Strategy

63. The Livestock Sector Vision Statement compresses a number of concepts into one sentence. The vision is broken down to four components, or Outcome Goals. The set of goals endorsed by the LSSWG meeting in November 2015 is given in Table 11. A table of performance indicators is included (Table 12), but the Strategy includes preparation of a detailed performance baseline to be completed by MOA's Economic Planning and Statistics Division so that progress of the Strategy towards its' goals can be monitored and reported.

Table 11: Vision component concepts and Goal statements

(Source: Livestock Sector Working Group)

Component Outcome Goal	Agriculture 2020 Objectives included	Indicative concepts included
Improved Governance “The capacity of government and industry organizations to design, formulate and implement programs,	<ul style="list-style-type: none"> • Improve implementation and policy formulation capability. • Improve delivery of agriculture support 	Consultative Engaged Communication Inclusive

regulations and deliver services”	<p>services</p> <ul style="list-style-type: none"> Enhance capabilities to generate funds and investment 	<p>Positive, not negative regulation</p> <p>Quality and safety standards</p> <p>Relevant</p> <p>Adequately funded</p> <p>Support services</p>
<p>Competitive value chains</p> <p>“Competitive agricultural value chains that increase value added and benefits to smallholder farmers and agro-enterprises.”</p>	<ul style="list-style-type: none"> Build modern agriculture in Fiji as an organized system Develop integrated infrastructure for agriculture. 	<p>Efficient</p> <p>Productive</p> <p>High value</p> <p>Innovative</p> <p>Knowledge-based</p> <p>Connected</p> <p>Local, regional, global</p>
<p>New generation opportunities</p> <p>“Livestock farming, industries and support services provide attractive opportunities for young people and women to earn income, gain skills, and follow rewarding careers in agriculture.”</p>	<ul style="list-style-type: none"> Improve delivery of agriculture support services Enhance capabilities to generate funds and investment 	<p>Inclusive</p> <p>Attractive</p> <p>Relevant</p> <p>Transformative</p> <p>Competency-based</p> <p>Communication sharing</p> <p>Non-agriculture initiatives</p> <p>Employment Skills</p>
<p>Sustainability and risk management</p> <p>“The livestock sector is resilient to climate change, disasters and other shocks, manages its natural resources sustainably and contributes to a healthy environment.”</p>	(not specified in Agriculture 2020)	<p>Resilience</p> <p>Adapted to changing conditions</p> <p>Animal welfare</p> <p>Organic technologies</p> <p>Green growth</p> <p>Healthy environmental assets</p>

Table 12: Strategy Component Performance Indicators

Outcome Goals	Indicator	Current Situation (2012 Statistics)	Target 2020
Improved Governance	Livestock GDP growth	3% per annum	3% per annum
Competitive Value Chains	Livestock products trade balance (kg)	-\$18,239,207	-\$16,970,255
	Total consumption of Livestock	\$213m	\$298m
New Generation Opportunities	Livestock labor productivity (livestock GDP/ employment in livestock)	\$23,613	\$25974
	Proportion of women employed in livestock farming and value chains	7%	30%
Sustainability and Risk Management	Nutritional contribution of livestock to food security – domestic supply of meat protein	53%	60%

	Growth in gross output of animal production	-0.4	>0
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5 THE OUTCOMES AND OUTPUTS

64. In the logical framework for the Livestock Strategy, there are four outcomes, each with a set of outputs (21 outputs in total) and 68 activities to achieve the desired outputs. The outcomes, outputs and activities are detailed in the following sections.

5.1 Outcome 1: Improved Governance

65. The outcome of improved governance is achieved by five outputs (Table 13).

66. Governance in the Livestock Strategy refers to *“The capacity of government and industry organizations to design, formulate and implement programs, regulations and deliver services.”*¹⁷ In the absence of such capacity the Strategy will not be implemented successfully. Key elements of governance include: accountability, participation, predictability, and transparency.¹⁸

67. Strategy implementation requires resources from many stakeholders (private sector, government, donors), and the implementation mechanism needs to facilitate a conducive environment to attract and mobilize resources. The Livestock Strategy needs to be formulated into implementable packages that attract investment from development partners, domestic financial institutions, and private sector investors. Implementation needs to have suitable mechanisms and management structures. Maintaining the Livestock Sector Working Group as the steering committee, and strengthening its secretariat with adequate resources is recommended to drive implementation of the strategy, monitor and report on its progress, and demonstrate effective and transparent governance to investment partners and the livestock industry itself.

Table 13: Outputs for Improved Governance

1. Improved governance	
Output	Description
1.1 Improved regulation	Regulation is enabling and transparent, awareness and compliance is high, and monitoring is effective.
1.2 Industry leadership, inclusion and participation	Development of the livestock industry is led by large farmers, agribusiness and commercial farmers which have the major economic impact, but inclusive of representatives of all men and women farmers and all geographical divisions of Fiji with support from government.
1.3 Improved services capacity	Livestock support services meet the industry's expressed priority needs through well-planned, and skilled human resources with adequate funding.
1.4 Investment incentives	Appropriate incentives provided by government are effective in increasing investment in the livestock industry.
1.5 Effective implementation	The Livestock Strategy is implemented in a timely and effective manner with adequate resources.

¹⁷ World Bank 1992, “Governance and Development”, the World Bank

¹⁸ ADB 1995, “Governance: Sound Development Management”, Asian Development Bank, October 1995

5.2 Outcome 2: Competitive Value Chains

68. The outcome of competitive value chains is achieved by six outputs (Table 14).

Table 14: Outputs for Competitive Value Chains

2. Competitive Value Chains	
Output	Description
2.1 Innovation	Research, development and extension that is responsive to industry needs for productivity, product development, and smart farming.
2.2 Quality and Safety	The livestock industry has capacity to produce and market high quality products that are preferred in high value markets, meet domestic and international food safety and quality requirements, backed up by cost-effective monitoring and assurance systems.
2.3 Business confidence	Agribusiness and smallholders have established commercial mechanisms and structures based on law that give them confidence to operate and give them an adequate share of value created in value chains.
2.4 Market development	Livestock farmers can access developed domestic market facilities, use market intelligence, and can access export market opportunities.
2.5 Finance	Access to affordable finance.
2.6 Feeds	Access to cost-effective livestock feeds in appropriate rations and quality.

69. The output is defined here as competitive agricultural value chains that increase value added and benefits to smallholder farmers and agro-enterprises. To be competitive in domestic and international markets, Fiji's livestock value chains must effectively link livestock farmers to input and output markets, provide access to modern technologies and investment, and be instilled with innovation and trust along each chain.

70. A key livestock sector issue is to manage economic vulnerability resulting from increasing levels of imports and a narrow agricultural export base. This vulnerability is due to Fiji's geographic isolation and limited development of local commercial farming, and needs to be addressed through stronger efforts to develop competitive commercial agriculture and agribusiness value chains. Growth and diversification of agricultural exports is often not feasible in Fiji's livestock sector, however the geographic isolation is a comparative advantage for competitive local commercial farmers.

71. Two key ideas should drive this component. First, prioritize commodity value chain activities based on how well they meet the following criteria (Table 15).

- a) Have potential for scaling up (e.g. in terms of market) or replication;
- b) Have potential for growth;
- c) Have potential interventions already identified or proven;
- d) Address cross-cutting issues; and
- e) Contribute to national policy goals.

72. Secondly, promote good value chain governance (good business enabling environment), and invest adequate resources – do not dilute investment over too many commodities or products.

Table 15: Value Chain Potentials

Note: this table to be updated by EP&S with baseline and target indicators

Commodity Value Chain	Comment
Feeds	Potential for scaling up; potential to involve smallholders and reduce poverty; cross-cutting issues; import substitution.
Dairy	Potential to involve smallholders and reduce poverty; import substitution.
Beef	Potential for scaling up; need to replace TB-culled stock; import substitution.
Pork & Poultry	Potential for productivity improvement and growth for import substitution and export.
Sheep & Goat	Potential to involve smallholders and reduce poverty; import substitution.
Bee products	Potential for growth based on increasing domestic market consumption, processors servicing smallholder hives, and export potential using disease-free status.

5.3 Outcome 3: Sustainability and Risk Management

73. The outcome of sustainability and risk management has five outputs (Table 16).

74. The goal is that the livestock sector is resilient to climate change, disasters and other shocks, manages its natural resources sustainably and contributes to a healthy environment. Transition toward climate smart agriculture is essential, because: (i) vulnerability of the poor to a large extent is caused by climate and natural disaster risks along with significant food price volatility, which calls for greater resilience and smallholder farmers are amongst the most vulnerable given their low asset base; (ii) agriculture is both part of the problem and part of the solution to reduce global carbon emissions and reduce organic waste pollution, while conferring other environmental benefits (soil erosion, water conservation, biodiversity); (iii) agriculture is important for nutrition and food security and without nutrition sensitive agriculture, it will be difficult to change the nutrition status of rural households, even as income and agricultural production rise; (v) the water footprint of agriculture can be very large, therefore water quality and water scarcity are important factors to consider.

75. Fiji is especially prone to disasters from cyclone and floods, as well as external economic shocks. The vulnerability of Fiji to natural disasters and economic shocks translates into high levels of vulnerability to hardship. Traditional social systems still play an important role in dealing with such shocks, but can only provide partial insurance. The relatively low level of extreme poverty and moderate to low levels of inequality, combined with the high prevalence of adverse shocks, suggest that extreme poverty may be largely transitory.

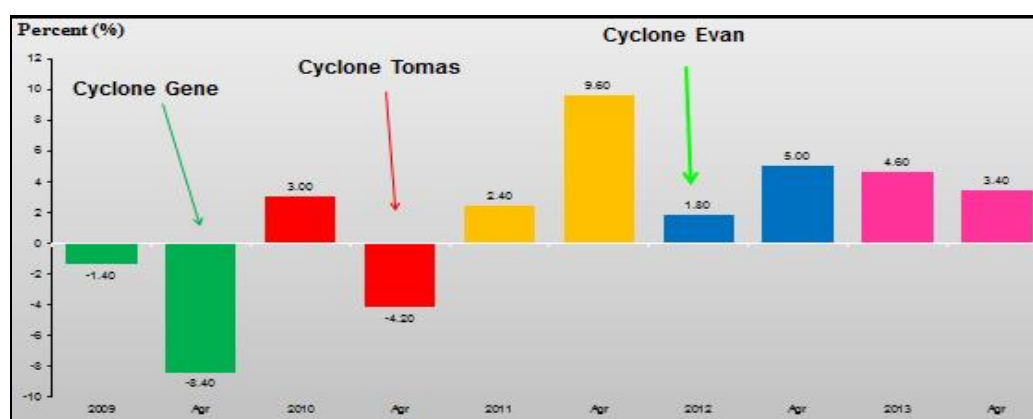


Figure 12 : Impact of cyclones on Agricultural Growth

(Source: Fiji Bureau of Statistics and Macroeconomic Committee)

Table 16: Outputs for Sustainability and Risk Management

3. Sustainability and Risk Management	
Output	Description
3.1 Improved resilience and risk management	Improved capacity to adapt to climate change and mitigate impacts of natural disasters.
3.2 Sustainable use of natural resources	Improved capacity to maintain and rehabilitate environment and natural resource assets.
3.3 Insurance	Viable schemes for livestock insurance.
3.4 Good practices	The livestock sector adopts good agricultural practices that improve the health and welfare of livestock, farmland, and workers.
3.5 Food security	Livestock contributes to food security in rural and outer island areas through provision of protein and income.

76. Climate change increases the severity and frequency of extreme weather events, but new index-insurance programs reduce the risks that farmers face, allowing them to make much needed investments in climate-smart technology. The Agricultural Insurance Company of India has created an enhanced weather index insurance product into the triggers that dictate when insurance payouts are made, such as rainfall levels¹⁹. The improved data has helped cover farmers in areas where traditional agricultural insurance was not previously available and ensures that payouts are made promptly whenever farmers are hit by weather disasters. From a pilot study conducted by the International Livestock Research Institute (ILRI)²⁰, an index-based livestock insurance product is now available through three commercial insurance partners in Ethiopia and Kenya. These insurance products trigger payouts to vulnerable pastoralists following extreme weather events, helping to build their resilience to climate change.

77. Food security is an important issue in the region. A series of national food summits culminated in a Framework for Action on Food Security²¹, which includes agricultural priorities that can be incorporated into the Livestock Strategy, especially: enhanced

¹⁹ CCAFS. 2015. *Six Steps to Success*. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

²⁰ <http://ibli.ilri.org>

²¹ SPC 2010. *Towards a Food Secure Pacific*. Food Security Working Group, SPC, Suva

production, processing and trading of safe and nutritious local food; food security information; and protecting vulnerable groups.

78. Preserving and utilizing agricultural diversity in terms of technologies and breeds is an important strategy being recognized currently for example through cross-breeding locally adapted pig varieties for better productivity, feed utilization and preference by the local market. There have been ‘go local’ campaigns in the Federated States of Micronesia, Fiji²², Samoa²³ and other countries to promote the health benefits of local foods, which also provides some marketing balance in support of local farm livelihoods and import substitution strategies. The changes in food imports and agricultural policy are best achieved through collaboration amongst agriculture (including farmer organizations), health, and education and trade sectors and within the region.

79. Biosecurity and pest and disease management and outbreak response systems for livestock are increasingly important risk management issues. Capable biosecurity services are very important both to prevent and respond to introductions of pests and diseases, and also to facilitate access to climate-adapted genetics and livestock inputs.

5.4 Outcome 4: New Generation Opportunity

80. The outcome of new generation opportunity is achieved by five outputs (Table 17).

81. The outcome goal is that livestock farming, industries and support services provide attractive opportunities for young people and women to earn income, gain skills, and follow rewarding careers in agriculture.

Table 17: New Generation Opportunities

4. New Generation Opportunity	
Output	Description
4.1 Youth engagement	The livestock industry is attractive and engaging for young people.
4.2 Youth employment	Increased numbers of young people engaged in the livestock industry in skilled and professional employment, farm management and agribusiness.
4.3 Skills and competencies	Education and training opportunities provide young people with modern skills and knowledge for the livestock industry.
4.4 Inclusion of women	Women in the livestock industry are skilled, their abilities are recognized, and they are employed at all levels from labor to management.
4.5 Access to land and finance for youth and women	Young people and women have adequate access to land and finance for livestock production, processing and marketing.

²² Supported by IFAD in 2014 through video clips aired on mainstream and social media.

²³ Supported by World Bank Samoa Agriculture Competitiveness Enhancement Project in 2015.

6 THE ACTIVITIES OF THE STRATEGY

82. With 21 outputs and 68 activities, the Livestock Strategy is quite detailed. The logical framework attempts to ‘package’ the outputs and activities in a way that each output can be implemented as a stand-alone unit project. Activity sets that are easier to implement are more likely to be done successfully. All outputs contribute to the overall outcome goals, so there is necessarily overlap between some activities. In addition, addressing cross-cutting issues such as improving the gender balance, or mechanisms for financing, require that a small number of similar activities are included in more than one output.

6.1 Activities Related to Outcome 1: Improved Governance

83. There are five outputs and 18 activities for improve governance.

Table 18: Activities for Improved Governance

1. Improved governance		
Output	Activities	
1.1 Improved regulation	1.1.1	Regulatory reform to improve quality, safety and animal welfare standards compliance.
	1.1.2	Regulatory reform to improve quality assurance in the feed industry.
	1.1.3	Regulatory reform to promote modern animal health products and veterinary medicines and their safe and effective use.
	1.1.4	Strengthen protection from dumping, unfair competition and biosecurity risk.
	1.1.5	Upgrade and expand analytical and laboratory capacity.
	1.1.6	Review legislation relating to livestock.
1.2 Industry leadership, inclusion and participation	1.2.1	Strengthen the meat and livestock industry representative organization.
	1.2.2	Institutionalize industry consultation in, policy, regulation, planning, implementation, and research prioritization.
1.3 Improved services capacity	1.3.1	Human resource development and increase number of women in technical, professional and managerial positions.
	1.3.2	Upgrade service facilities.
	1.3.3	Strengthen the performance assessment system and performance-based promotion in the MOA.
	1.3.4	Public-private partnerships in service delivery.
1.4 Investment incentives	1.4.1	Tax and duty concessions.
	1.4.2	Establish R&D funds.
	1.4.3	Matching grants.
	1.4.4	Public-private partnerships.
1.5 Effective implementation	1.5.1	Cabinet approval of the Livestock Strategy, its implementation arrangements and program budget for the first 5 years.
	1.5.2	Improve meat and livestock policy analysis, monitoring and evaluation.

6.1.1 Activities related to Output 1.1: Improved Regulation

84. These activities would be implemented by the MOA with relevant collaboration from the Attorney General's Office (AGO), Ministry of Industry and Trade (MIT), Ministry of Health, and Biosecurity Authority of Fiji (BAF), and the Veterinarian Association.

85. **1.1.1 Regulatory reforms to improve quality, safety and animal welfare standards compliance.** Quality, food safety and animal welfare regulation has been, and still is, a rapidly developing area of regulation to improve competitiveness and access to markets where compliance to international standards is mandatory. This activity will fund a review of existing domestic regulation, regional regulation, identification of gaps, out dated regulation and opportunities to harmonize and simplify, and revision or amendments. The activity will also include strengthening surveillance and compliance, particularly to ensure adequate funding from either government or user-pays, including through measures for compulsory or voluntary compliance. All reforms will be carried out with full consultation and collaboration between industry and BAF at every stage to ensure an improved business enabling environment.

86. **1.1.2 Regulatory reform to improve quality assurance in the feed industry,** via a Feed Bill or use existing truth in labelling legislation, and a voluntary or compulsory certification scheme. The activity, with full industry consultation to ensure awareness and adequate time for the transition, will promote the enactment of the proposed 2006 Feed Bill by start of 2017, and to complement the Bill will also develop voluntary quality certification before end of 2017. A voluntary certification scheme, in line with global practice, puts the onus on the seller of feeds to have quality assurance certification from either government or a 3rd party provider, giving the feed user an informed choice. Following the intentions of the Feed Bill, the voluntary scheme would apply to feed millers and not to suppliers of raw materials including small farmers and agri-industry by-products. The government may choose to provide free or subsidize the feed analysis cost at a diminishing rate for 5 years.

87. **1.1.3 Regulatory reform to promote modern animal health products and veterinary medicines and their safe and effective use.** New, more effective and environmentally friendly animal health products including herbal and naturopathic livestock remedies, and nutri-ceutical 'dietary supplements' are increasingly available from international suppliers. The activity will strengthen the capacity of the registrar of animal health and veterinary medicines to assess applications to import and use these products, and update and maintain its register of prescribed products and registered users. The activity will review the existing list of registered products in light of global regulation trends to de-register products which have negative impacts. The activity will also review and strengthen the registration of users, including private sector and accredited para-veterinary service providers.²⁴ The review will be carried out with full industry consultation, including the association of licensed veterinarians, importers and retail businesses and key user groups.

88. **1.1.4 Strengthen protection from dumping, unfair competition, and biosecurity risks.** Over the 10-year period of the strategy, Fiji will conduct trade negotiations and revise agreements with trading partners. MOA and MIT will be responsible for handling trade negotiations. Within the boundaries of WTO, this activity will ensure the livestock sector (through the FCLC) is fully consulted and participates in negotiations, and that the livestock trade is not dominated by retail interests seeking cheap or subsidized, low quality imports. The mechanisms for imposing import tariff or duties on livestock and livestock feed products

²⁴ Para-veterinary training has been developed in collaboration with USP. The next step is to commercialize the service so accredited para-vets can earn income.

should be monitored and maintained to mitigate the vulnerability of the domestic industry to large-scale international corporate power²⁵.

89. **1.1.5 Upgrade and expand analytical and laboratory capacity.** This activity is essential to support effective implementation of regulatory strengthening for quality and safety in animal health products, livestock products and feeds. The activity will include a review of government and industry analytical needs, laboratory capacity, laboratory accreditation to international standards, and recommendation for upgrading facilities, equipment and human resource capacity. The review will produce detailed costs. The activity will include provision of finance for procurement, civil works, and specified laboratory technician training (cost estimates in the strategy are nominal only).

90. **1.1.6 Review legislation pertaining to the livestock industry.** The Strategy will provide legal and technical assistance to review all of the legislation and regulations that govern the livestock industry, with respect to: (i) any gaps; (ii) capacity to implement; (iii) performance effectiveness; (iv) costs and financing (including any fees); (v) priorities; and (vi) draft improved regulations and other recommendations to strengthen, modernize, harmonize and streamline the regulatory environment. The review will be conducted in consultation with industry, and respective government agencies.

Table 19: Output 1.1 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
1.1.1	Legal expert	Person month	1	20	20
1.1.2	Legal expert	Person month	1	20	20
1.1.3a	Legal expert	Person month	1	20	20
1.1.3b	Industry consultation	Annual lump sum	5	4	20
1.1.4	Operations	Annual lump sum	5	1	5
1.1.5a	Lab expert	Person month	3	20	60
1.1.5b	Equipment	Lump	1	500	500
1.1.5c	Facilities	Lump	1	500	500
1.1.5d	training	Course	10	2	20
1.1.6	Technical assistance	Person month	5	20	100
TOTAL					1,265

6.1.2 Activities related to Output 1.2: Industry leadership, inclusion and participation.

91. This activity will be implemented by MOA in collaboration with FCLC and BAF.

92. **1.2.1 Strengthen the meat and livestock industry representative organization.** The apex representative body is the FCLC which has been receiving technical and financial support from the EU to be strengthened. Under the FCLC, representation from livestock commodity sub-sectors exists, including the Fiji Meat Industry Board (FMIB). This activity, focused on the meat and livestock sector, will provide a program budget for: (i) FCLC post-

²⁵ For example, in 2013 the pig industry, FMIB and Fiji Master Butcher's Association called on government to impose tariff on subsidized imports from abroad.

EU project support to act as Secretariat for the Strategy Implementation Committee; (ii) provision for industry representatives to participate with government in meetings, forums and consultations related to regulation, biosecurity, trade and policy; and (iii) program budget for three years so that FCLC can grow the membership base and sustain its operations via income from members services, including market and other information services, advocacy, and possible roles in feed and facilities quality assurance service, market linkages, and para-veterinary services.

93. **1.2.2 Institutionalize industry consultation in policy, regulation, planning, implementation and research prioritization.** In this activity, the MOA and BAF will strengthen written and operational procedures to facilitate the active participation of FCLC in policy, planning, regulation, strategy implementation and research prioritization. The MOA and BAF will maintain records of consultation, feedback, complaints and responses to industry. MOA will establish protocol requiring all its livestock research proposals to be endorsed by the FCLC prior to approval for funding, and for research reports (or presentations) to be accepted by FCLC. This will require MOA research staff to consult FCLC and adjust research proposals if necessary; it will also provide opportunity for industry to participate more closely in research prioritization, evaluation and results dissemination.

Table 20: Output 1.2 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
1.2.1	Operations fund	Annual lump sum	5	40	200
1.2.2	Operations fund	Annual lump sum	5	10	50
TOTAL					250

6.1.3 Activities related to Output 1.3: improved services capacity

94. This activity will be implemented by the MOA in collaboration with the Public Service Commission (PSC). The scope of the improvement ideally will include MOA, FNU agriculture faculty, Navuso Agricultural School, and Tutu Training Centre.

95. **1.3.1 Human resource development and increase the number of women in technical, professional and managerial positions.** The Strategy will support training needs assessment according to job requirements and provision of training. The MOA will set a target of 50% women in technical, professional and managerial positions.

96. **1.3.2 Upgrade service facilities.** The Strategy will support refurbishment of MOA stations and offices to enable improved service provision.

97. **1.3.3 Strengthen the performance assessment system and performance-based promotion in the MOA,** including recognition of employment in the private sector. This activity aims to encourage and reward excellent service performance amongst MOA staff, and recognize that commercial work experience will help MOA staff to provide better support services to commercial farmers. Working with the PSC, the activity will strengthen the existing performance assessment system and tie good performance assessment to the pay-scale increments that are available within grades. The activity will also ensure that work outside the public service in the private sector or in education (e.g. FNU) is recognized as equivalent experience in job applications and pay awards.

98. **1.3.4 Public-private partnerships in service delivery** will be implemented where appropriate. Some examples of services that MOA can privatize, partner in, or contract out to service providers, include: (i) laboratory analysis (e.g. soil, fertilizer, feed); (ii) social

mobilization and awareness campaigns; and (iii) extension and information services via FCLC, Navuso Agricultural School, and Tutu Training Centre. .

Table 21: Output 1.3 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
1.3.1	Training	Course	250	2	500
1.3.2	Civil works and equipment	Annual lump sum	5	400	2,000
1.3.3	Salary increment	Grade	500	1	500
1.3.4	PPP services	Contract	25	20	500
TOTAL					3,500

6.1.4 Activities related to Output 1.4: Investment incentives

99. These activities will be coordinated by the MOA in collaboration with the FCLC, FRCA, Attorney General's Office (AGO), and Ministry of Public Enterprise (MPE).

100. **1.4.1 Tax and duty concessions** already exist in some areas of agriculture, such as duty waiver on raw feed materials and agricultural machinery, and also tax holiday on qualifying investment. The Strategy will support a review of tax and duties for the livestock sector, including tax deductions of 150% for expenditure on the priorities in this Livestock Strategy, such as: (i) qualified public-private partnerships; (ii) capital expenses related to quality and safety facilities upgrade; (iii) on-farm and post-farm mechanization; (iv) staff training expenses related to commercial livestock industry; (v) recognized research and development fund contributions; (vi) farm management trainee employment; (vii) youth and women employment; (viii) on-farm capital infrastructure (e.g. electricity, farm access, fencing, yards, water supply, sheds), and (ix) qualifying land care works (e.g. agroforestry land rehabilitation, watercourse protection, environmental management systems, and disaster mitigation works).

101. **1.4.2 Establish R&D funds.** The Strategy will support the livestock industry, through the FCLC, and with legislative support from the AGO, to establish a Meat and Livestock competitive R&D fund similar to the models in Australia and New Zealand. To be confirmed by consultation, the system will work as outlined here: livestock farm and processing enterprises with over \$100,000 gross income will be required to pay a 2% levy to the R&D fund; the levy payment will be fully (or greater than 100%) tax deductible; the government will match (or exceed) the amount deposited; and the FCLC will in turn: (i) require all R&D proposals and research completion reports to be approved by industry; and (ii) allow any capable entity to be eligible to carry out R&D using the fund – the fund is therefore open to competition.

102. **1.4.3 Establish matching grants.** The MOA already has experience with the funding mechanism of providing matching grants to eligible beneficiaries for qualifying livestock development. The Strategy will continue to use this mechanism.

103. **1.4.4 Public-private partnerships.** The Strategy will actively seek public-private partnership opportunities including for: (i) livestock sector infrastructure; (ii) support services; (iii) R&D; and (iv) livestock sector training institutions.

Table 22: Output 1.4 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
1.4.1	Tax incentives	Concession	5	1,000	5,000
1.4.2	R&D fund payments	Annual lump sum	5	100	500
1.4.3	Matching grants	Annual lump sum	5	1,000	5,000
1.4.4	PPP service contracts	Contract	25	40	1,000
TOTAL					11,500

6.1.5 Activities related to Output 1.5: Effective implementation

104. These activities will be implemented by MOA in collaboration with industry representatives.

105. **1.5.1 Cabinet approval of the Livestock Strategy, its implementation arrangements and program budget for the first 5 years.** The standard government procedure should be followed, which involves submission for Cabinet approval of the following: (i) the Livestock Strategy; and (ii) a Cabinet paper detailing the establishment of an Implementation Committee, its membership and terms of reference, and initial budget commitment.

106. The Livestock Strategy will be finalized by April 2016, based on this draft, and including updated baseline and performance indicators provided by MOA's EP&S. The final version of the Strategy must be endorsed by the LSSWG prior to Cabinet submission.

107. Implementation must be driven and lead by both the private sector and government, and this must be explicit in the Cabinet paper.

108. Implementation options considered included:

- a) A traditional approach where MOA takes sole responsibility for implementing the Strategy. This has not resulted in the full dynamic growth of the private livestock sector now envisaged, since under this option there are insufficient opportunities for leadership and innovation of the private sector. Nor has it effectively lead to necessary coordination across the public sector.
- b) Clearly, the Strategy requires leadership from the MOA and the agricultural private sector. Also essential are the active participation from other Ministries including those responsible for trade, commerce, labor, youth, women, poverty alleviation, local development, health, planning, as well as state authorities with responsibilities for biosecurity, taxes and duties, and certain public enterprises. Therefore MOA should chair the Strategy Implementation Committee, with the Vice Chair from the private sector.
- c) The LSSWG could become registered as an Association with a constitution defining its role to steer implementation of the Strategy, and its membership of representatives of the livestock sector. As this option requires formal establishment of another voluntary institution with no existing funding nor election processes, this has not been recommended.
- d) The FCLC, as the already established premier industry representative body, is preferred to host the Livestock Sector Strategy Implementation Secretariat. The Cabinet submission will include a program funding commitment of five years for the

Secretariat and supporting technical assistance to build capacity and manage appropriate activities.

- e) The Cabinet submission papers specifying membership of the Implementation Group, terms of reference for the members, terms of reference for the Secretariat, and budget for the Secretariat will be prepared by the CEO of the FCLC in consultation with the LSSWG, and the Permanent Secretaries of MOA and MFNP.

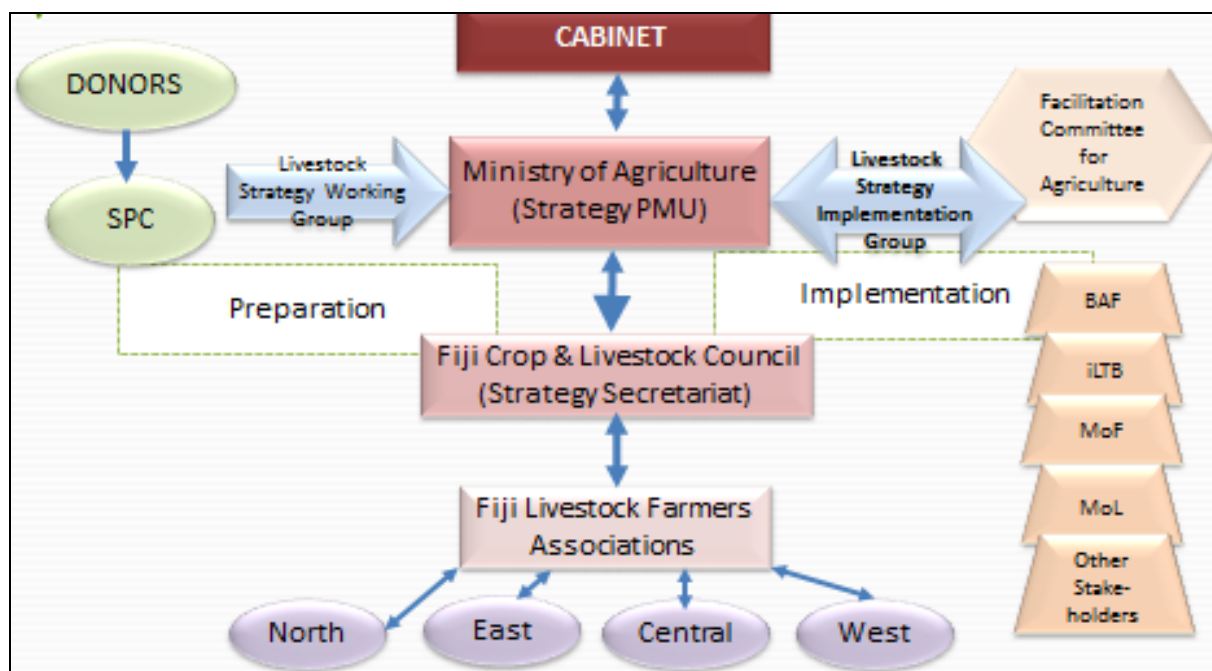


Figure 13: Implementation Diagram

109. **1.5.2 Improve meat and livestock policy analysis, monitoring and evaluation.** The strategy will provide technical assistance to the MOA Animal Health and Production Policy section and Economic Planning and Statistics section to strengthen capacity during the first 5 years of implementation.

Table 23: Output 1.5 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
1.5.1a	Secretariat support	annual lump sum	5	300	1,500
1.5.1b	Implementation expert	Person-months	15	40	600
1.5.2	Policy and M&E expert	Person-months	15	40	600
TOTAL					2,700

6.2 Activities Related to Outcome 2: Competitive Value Chains

110. There are six outputs and 23 activities for competitive value chains.

Table 24: Activities for Competitive Value Chains

2. Competitive Value Chains		
Output	No.	Activities
2.1 Innovation	2.1.1	R&D on priorities identified by industry
	2.1.2	Competitive grant funds financed by industry contributions and government
	2.1.3	Participatory research, evaluation and dissemination
	2.1.4	Strengthen R&D capacity and professionalism
	2.1.5	Strengthen links between research providers
	2.1.6	Strengthen knowledge management, knowledge sharing
2.2 Quality and Safety	2.2.1.	Strengthen skills and capacity for Q&S management, monitoring and analysis
	2.2.2	Implement regulatory reforms to streamline, modernize, harmonize and improve compliance
	2.2.3	Expand and upgrade facilities including cold chains and processing
	2.2.4	Establish grading and assurance systems agreed by industry and market
2.3 Business confidence	2.3.1	Strengthen value chain linkages
	2.3.2	Training in farming as a business
2.4 Market development	2.4.1	Product development and promotion
	2.4.2	Infrastructure for markets, access, and logistics
	2.4.3	Trade and market access protocols
	2.4.4	Market intelligence
2.5 Finance	2.5.1	Business skills training
	2.5.2	Development of agri-finance products
	2.5.3	Strengthen FDB capacity to finance livestock industry development
	2.5.4	Foreign investment facilitation
2.6 Feeds	2.6.1	Promote the Feed Bill, monitoring program, and voluntary certification
	2.6.2	R&D to develop commercial value chains for local feed resources
	2.6.3	R&D with agribusiness to develop commercial production of feeds and forage

6.2.1 Activities related to Output 2.1: Innovation

111. These activities will be implemented by MOA in close collaboration with the LSSWG, FCLC and FNU. Agencies within the Consultative Group on International Agriculture Research (CGIAR) network such as FAO and the Australian Centre for International Agriculture Research (ACIAR) may be approached for technical assistance.

112. **2.1.1 R&D priorities identified by industry.** This activity is the same as for R&D support under Outcome 1, activities 1.1.2 and 1.4.2, but is reiterated here to stress that R&D driven by industry priorities is essential for competitive value chains. MOA livestock research will organize an annual presentation to industry of work completed and proposals for new or extended research. FNU livestock research and other R&D providers will also be invited to

present outputs and proposals to industry. The aim is to get endorsement from industry (also from funding bodies) of the research agenda, and for researchers to incorporate industry priorities, rather than an academic conference.

113. **2.1.2 Competitive grants financed by industry contributions and government.** This activity is the same as for 1.4.2 but is reiterated here to stress that R&D driven by industry priorities is essential for competitive value chains. Endorsement by industry obtained through activity 2.1.1 is a pre-requisite for awarding R&D grants.

114. **2.1.3 Participatory research, evaluation and dissemination.** The MOA and FNU will promote participatory approaches in R&D and its dissemination. Some of this is already happening, the Strategy will provide legal expertise to strengthen and institutionalize the practice. MOA and FNU will identify suitable farmer and industry partners for on-farm and in-industry R&D, and sign research agreements cleared by the MOA and FNU legal office to cover intellectual property (IP) rights, occupational health and safety (OHS), and financial risk management. Research necessarily entails some risk of failure as well as reward, for this reason the risk will be shared by government and the research partner.

115. **2.1.4 Strengthen R&D capacity and professionalism.** The Strategy will support training in research methods, proposal writing, data analysis and evaluation, dissemination strategies, and opportunities for peer-reviewed publication including through the Fiji Journal of Agriculture.

116. **2.1.5 Strengthen links between R&D providers** through a joint venture of MOA, FNU agriculture faculty and vocational training bodies in a combined Fiji Institute of Agriculture. This concept builds upon the historic and practical connections between the former Fiji College of Agriculture and the MOA Koronivia Research Station, and also Fiji's recent transformation of its tertiary and vocational training sector under the Ministry of Education (MOE), which has parallel models in Australia, New Zealand and elsewhere. This trend is driven by cost-saving, efficient utilization of resources and consolidation of agricultural innovation expertise and resources in a collegiate, rather than antagonistic structure. The Strategy will support the MOA and MOE to establish a joint venture business, the Fiji Institute of Agriculture, with each party contributing their research facilities and staff to the Institute which has a business mission to train people in agriculture and conduct R&D. As incorporated under the Companies Act, the Institute will have a Board of Directors (from MOA, FNU, MPE and agricultural industry), and will have ability (and expectation) to raise and expend funds independently and engage both nationally and internationally. An example of this structure is the Tasmanian Institute of Agriculture (TIA)²⁶.

117. **2.1.6 Strengthen knowledge management and knowledge sharing.** MOA has over the years produced R&D information that has been lost or never communicated. At present and increasingly in future, knowledge relevant to the livestock sector is increasingly stored, and available through information technology (IT). This activity will support MOA and the livestock industry in capturing, developing, sharing, and effectively using knowledge. The Strategy will support development of knowledge management (KM) systems, communications, and human resource skills to improve knowledge storage and retrieval, improve collaboration, and improve impact of knowledge dissemination through publications, websites, interactive IT and use of social media.

²⁶ <http://www.utas.edu.au/tia>. The TIA partnership has brought together the human and physical resources of the Tasmanian Government with the scientific research and teaching capacity of the University of Tasmania (UTAS) to create a center of excellence in agricultural research, development, extension, education and training. TIA's activities are funded by the Tasmanian Government, UTAS, agricultural research, development and extension organizations, resource management organizations, other granting bodies and industry.

Table 25: Output 2.1 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
2.1.1	Annual R&D prioritization workshop	Workshop	5	10	50
2.1.2	As per 1.4.2				0
2.1.3	Legal expert	Person month	1	20	20
2.1.4	Technical assistance	Lump sum	5	20	100
2.1.5a	Institution development mentoring	Lump sum	1	100	100
2.1.5b	Start-up investment	Lump sum	1	10,000	10,000
2.1.6a	IT equipment	Lump sum	1	500	500
2.1.6b	KM expert	Person month	4	20	80
2.1.6c	KM training	courses	50	2	100
TOTAL					10,950

6.2.2 Activities related to Output 2.2: Quality and Safety

118. These activities will be implemented by MOA in collaboration with FCLC, the Fiji Food Safety Association (FFSA)²⁷, Ministry of Health, FMIB, Fiji Master Butchers Association (FMBA), and Biosecurity Authority of Fiji.

119. **2.2.1 Strengthen skills and capacity for quality and safety management, monitoring and analysis.** The activity will support livestock enterprises to access the services of the FFSA or other provider to establish quality and safety systems, train staff, and design upgraded facilities including in-factory quality analysis and product development laboratory facilities. Sources of finance for facilities upgrade are envisaged in other elements of the Strategy. Improved industry-wide monitoring and analytical laboratory services are detailed in Output 1.1: Improved regulation.

120. **2.2.2 Implement regulatory reforms to streamline, modernize, harmonize and improve compliance.** This activity is already detailed in Output 1.1: Improved regulation, but is repeated here since it is an essential part of improving quality and safety in livestock products.

121. **2.2.3 Expand and upgrade facilities including cold chain and processing.** The aim of this activity is to mobilize investment in quality and safety facilities along the meat and livestock value chain. Design capacity will be available under activity 2.2.1, and the investment mechanisms may include incentives under activities 1.4.3 matching grants, 1.4.4 public-private partnerships, and 2.5 below.

122. **2.2.4 Establish grading and assurance schemes agreed by industry and market partners.** This activity will support FCLC to organize and conduct hands on value chain workshops in which livestock commodity groups, processors, buyers, retailers and hospitality industry can discuss, review, and establish improved and mutually agreed grading and quality standards in response to changes in consumer preferences, food safety and animal

²⁷ Launched October 2015 with support from the International Trade Centre (ITC) under the European Union-funded Improvement of Key Services to Agriculture (IKSA) project. - See more at: www.fijifoodssafety.com

welfare issues, breeds and production methods, and new product development. The activity will also support promotion and awareness campaigns within the industry.

Table 26: Output 2.2 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
2.2.1	Matching grants to purchase training and services	Annual lump sum	500	2	1,000
2.2.2	Cost in 1.1.1 and 1.1.2				
2.2.3	Cost in 1.4.3, 1.4.4 and 2.5				
2.2.4	Workshops	Workshop	5	10	50
TOTAL					1,050

6.2.3 Activities related to Output 2.3: Business confidence

123. These activities will be implemented by MOA in collaboration with FCLC, FMIB, FMBA, and the TLTB as appropriate.

124. **2.3.1 Strengthen value chain linkages.** The Strategy will provide technical assistance via FCLC to link farmers into value chains. FCLC will identify farmers and both upstream and downstream business, and organize forums to foster development of value chain relationships in both inward and outward directions. FCLC will host workshops and implement pilots of contract farming, approved supplier programs, and other business linkage mechanisms. The pilots and forums will establish the decisions regarding finance, administration, extension, farmer selection criteria, product quality specifications, supply schedules, and pricing structures. The technical assistance will also work with the activity 4.5 to secure land for contract farming.

125. **2.3.2 Training in farming as a business.** The Strategy will provide eligible farmers training in farming as a business, and preparation of farm business plans utilizing the proven curriculum and trained staff of the MOA Farm Management Section, Land Resources Division.

Table 27: Output 2.3 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
2.3.1a	Market linkage/ contract farming expert	Person-months	6	20	120
2.3.1b	Workshops	Workshop	20	2	40
2.3.2	Farm management service	Farm plans	100	2	200
TOTAL					360

6.2.4 Activities related to Output 2.4: Market development

126. These activities will be implemented by MOA in collaboration with FCLC, MOT, and BAF.

127. **2.4.1 Product development and promotion.** The Strategy will provide matching grants to eligible livestock businesses that link smallholders to markets. The grants will be used to purchase technical advice for product development and design services for marketing and promotion. The Strategy will also provide grants for industry collaborative commodity promotional campaigns.

128. **2.4.2 Infrastructure for markets, access and logistics.** The Strategy will provide finance and facilitate planning assessment and approvals processes for eligible livestock industry market and logistics infrastructure including farm roads, jetties, livestock logistics and processing hubs, market and cold chain infrastructure, and co-requisite environmental and animal welfare safeguard infrastructure. Finance may be as a matching grant for communities or business, or as public-private partnership for larger infrastructure where there is clear public sector rationale for investment, such as abattoir development.

129. **2.4.3 Trade and market access protocols.** The Strategy will support the development and implementation of market access protocols to enable export trade in livestock products. The Strategy will support negotiation, and also support periodic surveys for the presence or freedom of specific transboundary animal diseases including for bees.

130. **2.4.4 Market intelligence.** The Strategy will continue²⁸ to build the capacity of FCLC and other Fijian partners to deliver trade and market information through rural telecentres, online resources and mobile phone-based solutions. The Strategy will establish and maintain links to regional market watch service so that Fijian livestock farmers and businesses can be forewarned of market movements in volume, price, quality and new competitors.

Table 28: Output 2.4 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
2.4.1	Matching grants	Matching grant	250	20	5,000
2.4.2	Public-private partnership	PPP	10	1000	10,000
2.4.3	Protocol preparation costs: research, surveys and negotiation	Annual lump sum	5	100	500
2.4.4	Operational support and wages	Person-months	60	5	300
TOTAL					15,800

6.2.5 Activities related to Output 2.5: Access to finance.

131. These activities will be implemented by FCLC in collaboration with FDB, commercial banks, and National Centre for Small and Medium Enterprise Development (NCSMED).

132. **2.5.1 Business skills training** will be provided under the Strategy to eligible farmers so that they can prepare competent business plans and successfully apply for loans and manage repayments. NCSMED will be contracted to provide training in basic business literacy and financial management, and will collaborate with FDB to ensure loan approval requirements can be met by eligible farmers.

133. **2.5.2 Further development of agri-finance products** by commercial and merchant banks including leasing for land and machinery. The Strategy will support technical

²⁸ Supported up to 2016 by the EU-ITC *Key services to livestock and livestock products*

assistance to conduct a review of financial products and financial regulation in the livestock industry, especially for land and machinery leasing. The review will deliver recommendations to the RBF and suggest lending and leasing products to FDB and commercial banks²⁹. The government may provide stimulus measures through subsidy, tax relief or other measures for the first five years of the strategy.

134. **2.5.3 Strengthen FDB capacity to finance livestock industry development.** FDB has an historic interest in maintaining and developing its agriculture and livestock portfolio. The Strategy will support a review of livestock portfolio performance, build capacity for livestock enterprise assessment, and design improved lending products for the industry.

135. **2.5.4 Foreign investment facilitation.** The Strategy will support Fiji Invest to continue to promote investment opportunities and to facilitate foreign investors in the livestock sector.

Table 29: Output 2.5 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
2.5.1	Training courses	course	20	50	1,000
2.5.2	Agri-finance expert	Person-months	1	40	40
2.5.3	Agri-finance expert	Person-months	1	40	40
2.5.4	Investment services	Annual lump sum	5	100	500
TOTAL					1,580

6.2.6 Activities related to Output 2.6: Feeds.

136. These activities will be implemented by the MOA, FCLC, Research Council of Fiji and the bodies responsible under the Feed Bill 2008.

137. **2.6.1 Promote the Feed Bill, monitoring program and voluntary certification.** This activity is to ensure a monitoring program is carried out to implement the feed industry regulatory reform described in 1.1.2. The Strategy will support the FCLC to work with the MOA in promoting the monitoring and compliance, including development of a voluntary certification scheme to turn compliance into an attractive product attribute in a competitive market.

138. **2.6.2 R&D to develop commercial feed value chains for local resources.** The Strategy will provide technical support to: (i) determine feed formulations primarily based on local ingredients; and (ii) commercialize the value chains involving local feed ingredients including by-products from processing fish, meat, flour and grains, coconut and sugarcane, and also municipal market waste, and food retail waste.

139. **2.6.3 R&D with agribusiness to develop commercial production of feeds, mineral blocks and forage** by small and medium farmers. Research and development on feed and forage crops, and feed trials, will be supported. Strategies for supplementary feed resources during periods of drought and disaster will be supported. Crops include those intended for animal feed (e.g. grain and forage sorghum, pearl millet, cowpea,), crop rotation

²⁹ An example of this type of technical assistance is the ADB-financed Samoa Agribusiness Support Project

break crops (e.g. lablab), tropical pasture species, and agroforestry resources. The R&D will also pilot viable mechanized farming systems for feed-market cassava, maize and other

Areas of Interest	Priority	Comments
Quality/ Feed Testing/ Feed Research	1	Much already done; need to disseminate information into commercial operations.
Compulsory vs voluntary Regulation	2	Regulation or voluntary certification of quality.
Costs (understanding of efficient used of feed)	3	Potential for rapid adoption if farmers' understanding is improved. Imported feeds are ruled by international prices.
Use of local Ingredients	3	Need to develop the feed value chains.
Organic feed production	5	On-farm nutrient cycling is good (manure use in own feed production). Little understanding of organic standard requirement that organic livestock must only eat certified organic feed, which is too expensive to import

crops that are also grown primarily for human consumption, using intentionally-bred varieties and tailored support systems for contracted growers.

Table 30 : Prioritization of Feed issues

(Source: Livestock Strategy Validation Workshop, Feb 2016)

Table 31: Output 2.6 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
2.6.1	Awareness campaign	Annual lump sum	2	50	100
2.6.2	R&D competitive grants – see 1.4.2				
2.6.3	R&D competitive grants – see 1.4.2				
TOTAL					100

6.3 Activities related to Outcome 3: Sustainability and Resilience

140. There are five outputs and 16 activities for sustainability and resilience.

Table 32: Activities for Sustainability and Resilience

3. Sustainability and Resilience		
Output	Activities	
3.1 Improved resilience and risk management	3.1.1	R&D to promote stress tolerant breeds and feed resources
	3.1.2	Promote whole-farm planning
	3.1.3	Disaster monitoring and preparedness measures
	3.1.4	Veterinary services capacity building
3.2 Sustainable use of natural resources	3.2.1	Development of rangeland management code of practice guide
	3.2.2	Strengthen ability to comply with environmental safeguards
	3.2.3	Promote use of biogas and other effluent management systems
	3.2.4	Adapt and adopt regional dairy industry environmental standards
3.3 Insurance	3.3.1	Develop insurance schemes for the livestock sector.
	3.3.2	Financing mechanisms for livestock insurance premiums and claims

3.4 Good practices	3.4.1	Extension on good practices
	3.4.2	Promotion of organic practices for livestock
	3.4.3	Promotion of market-preferred certification options
3.5 Food security	3.5.1	Strengthen remote area local livestock food chains
	3.5.2	Promotion of small livestock for household food security
	3.5.3	Strengthen measures to discourage import of livestock products that contribute to non-communicable disease.

6.3.1 Activities related to Output 3.1: Improved resilience and risk management

141. These activities will be implemented by MOA in collaboration with FCLC, NDMO and Biosecurity Fiji.

142. **3.1.1 Research, development and extension promote stress tolerant breeds and feed resources.** The Strategy will support R&D on stress tolerant breeds and pasture, forage and feed resources, through farm and industry partnerships. This R&D will be fully funded by government, not matching grants, since the livestock industry often focuses on shorter term production issues rather than adapting to long-term changes.

143. **3.1.2 Promote whole-farm planning to improve land care and sustain productive farming.** The Strategy will strengthen the resilience of farms and farming systems using whole-farm planning approaches including land development according to land use capacity and soil classification, implementation of water farm-wide supply, water conservation and erosion controls, agroforestry, rangeland and paddock grazing management, and farm infrastructure (e.g. fences, drains, races, and waste management). Whole farm plans will be prepared by the Farm Management Section, Land Resources Division. Government will subsidize the cost of the service to eligible farmers in the first 5 years of the Strategy.

144. **3.1.3 Disaster monitoring and preparedness measures** and response systems capacity for climate and disease threats will be supported by a livestock fund reserve mechanism established under the Strategy in collaboration with the NDMO.

145. **3.1.4 Strengthen veterinary services** and para-vet services to reduce vulnerability to introduction of infectious agents, including invasive species – animal disease control requires appropriate capacity to more effectively reduce the risk of introduction and spread and to also monitor, report on and act against infectious disease situations. This activity will focus on private sector veterinary services through a matching grant mechanism.

Table 33: Output 3.1 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
3.1.1	R&D	grants	10	250	2,500
3.1.2	Farm management service	Farm plans	500	2	1,000
3.1.3	Disaster fund	Fund facility	1	10,000	10,000
3.1.4	Veterinary services capacity building	Annual sum for training and monitoring	5	100	500
TOTAL					14,000

6.3.2 Activities related to Output 3.2: Sustainable use of Natural Resources

146. These activities will be implemented by the MOA in collaboration with the Ministry of Environment and FCLC.

147. **3.2.1 Development of a rangeland management code of practice** and guide for dry and higher altitude areas, for ruminants will be supported by the Strategy through a policy grant. The code of practice may be prepared and promoted by the Fiji Institute of Agricultural Science (FIAS), in collaboration with the beef, sheep and goat industries. The code and its implementation will actively discourage the widespread and very damaging practice of regularly burning grassland in the dry season.

148. **3.2.2 Strengthen ability to comply with environmental safeguards** on degradation of forest and surface water resources, especially primary forest clearing, riverine boundaries, and effluent management. The Strategy will provide support to livestock farmers and agribusiness to obtain technical assessment and design services, to prepare environmental management systems (EMS) which comply with and exceed the requirements of relevant environment and planning regulations (e.g. based on ISO 14001).

149. **3.2.3 Promote the use of biogas, and other effluent management systems.** The Strategy will support livestock farmers and agribusiness to establish biogas and dispersal systems to paddocks and feed crops as part of effluent management systems. The Strategy will provide matching grants to finance design, permits and construction.

150. **3.2.4 Adapt and adopt regional livestock industry environmental standards.** Increasing intensification of dairy, piggery and poultry farming areas is expected over the next 10 years. Therefore the Strategy will provide a policy grant to the livestock industry to establish standards for environmental management and animal welfare (or incorporate such measures into existing industry code of practice). There are existing codes of practice and standards abroad for example New Zealand³⁰.

Table 34: Output 3.2 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
3.2.1	Policy grant	grant	1	50	50
3.2.2	EMP services	plans	100	2	200
3.2.3	Matching grants	Effluent systems	1,000	5	5,000
3.2.4	Policy grant	grant	1	50	50
TOTAL					5,300

6.3.3 Activities related to Output 3.3: Insurance

151. These activities will be implemented by the FCLC in close collaboration with the AOG, the RBF and the insurance industry.

³⁰ The Dairying and Clean Streams Accord (the Accord) was agreed between Fonterra Co-operative Group Ltd (which comprises over 95 per cent of New Zealand's dairy industry), the Minister for the Environment, the Minister of Agriculture, and regional authorities in May 2003. The Accord reflects a non-legally binding commitment by these parties to improve the environmental performance of dairying, and has a goal of achieving "clean healthy water in dairying areas". <http://www.mfe.govt.nz/publications/land/water-quality-selected-dairy-farming-catchments-baseline-support-future-water-5>

152. **3.3.1 Develop insurance schemes for the livestock sector.** The Strategy will provide technical assistance to the FCLC, RBF and insurance industry to: (i) review livestock insurance schemes abroad; (ii) develop livestock insurance products against theft, disease and disaster; (iii) conduct risk-based indexation of theft, weather and disease losses to assist the insurance industry to calculate viable premiums; and (iv) propose financing arrangements and obtain stakeholder agreement to pilot a livestock insurance scheme.

153. **3.3.2 Financing mechanism for livestock insurance premiums and claims** proposed and agreed in 3.3.1 above will be support as a 10-year pilot under the Strategy. The mechanism will draw from experience abroad and initiatives in Fiji³¹.

Table 35: Output 3.3 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
3.3.1	Agri-finance expert	Person-months	2	40	80
3.3.2	Insurance fund	Fund facility	1	1,000	1,000
TOTAL					1,080

6.3.4 Activities related to Output 3.4: Good Practices

154. These activities will be implemented by the MOA in close collaboration with the FCLC, organic industry association and certification agencies.

155. **3.4.1 Extension on good practices.** The Strategy will provide MOA operational support for the documentation, promotion, and training in good practices for each type of livestock, including production, record keeping, nutrition, husbandry, hygiene, biosecurity, health, animal welfare compliant to OIE recommendations.

156. **3.4.2 Promotion of organic practices for livestock.** This Strategy will support R&D, extension and training on livestock production practices which are compliant with Pacific and international organic standards. The aim encompasses support to farmers for organic certification but not limited to promoting certified organic farming enterprises unless there is an identified market price premium³² (e.g. from the tourism and hospitality industry). The Strategy will provide technical assistance including workshops and information sharing events with opportunities for organic input suppliers and downstream processors to participate.

157. **3.4.3 Promotion of market-preferred certification options** including for attributes such as organic, fair trade, halal, cruelty free, free range, cage-free, sow stall free. The Strategy will provide technical support to the FCLC to identify market preferences for product attributes that are assured by certification, and to provide advisory support for livestock enterprises to develop standard operational procedure (SOP) manuals and other documentation for certification.

Table 36: Output 3.4 Cost estimates

Activity	Item	Unit	Quantity	Unit cost	Cost (FJD
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³¹ For example, the FAO and MOA held consultations in May 2014. <http://www.fiji.gov.fj/Media-Center/Press-Releases/AGRICULTURAL-INSURANCE-OPPORTUNITIES-FOR-FIJIAN-FA.aspx>

³² For example Vanuatu Abattoirs Limited (VAL) exports organic beef.

				(FJD '000)	'000)
3.4.1	GAP extension program	Annual	5	100	500
3.4.2	Technical assistance and training	annual lump sum	3	100	300
3.4.3	Advisory services	Annual lump sum	3	100	300
TOTAL					1,100

6.3.5 Activities related to Output 3.5: Food Security

158. These activities will be implemented by the MOA in collaboration with the FCLC, MOT, MOH, and responsible agencies specified in the Fiji Plan of Action on Food Security.

159. **3.5.1 Strengthen remote area local livestock food chains.** The Strategy will provide support to rural and outer island communities to establish or improve livestock food chain activities including production, micro abattoir, and cold chain facilities. Financing will be through matching grants based on eligible business plans.

160. **3.5.2 Promotion of small livestock for household food security.** This activity will provide training in small animal production and safe, hygienic slaughter with a focus on home and village consumption including the *magiti* and local festival market.

161. **3.5.3 Strengthen measures to discourage import of livestock products that contribute to non-communicable disease.** The Strategy will provide advocacy and awareness campaign support for livestock industry, health and trade agencies to strengthen restrictions on the import of fatty meat cuts, high salt processed meat products, and other livestock products that are contributing to the epidemic of obesity, heart and circulation problems and other non-communicable diseases (NCD), through measures such as tariffs, excision of products from trade agreement, and awareness campaigns.

Table 37: Output 3.5 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
3.5.1	Matching grants	Grant	20	50	1,000
3.5.2	Training	Course	100	5	500
3.5.3	Advocacy operation	Annual lump sum	5	50	250
TOTAL					1,750

6.4 Activities related to Outcome 4: New Generation Opportunity

162. There are five outputs and 11 activities for new generation opportunity.

Table 38: Activities for New Generation Opportunity

4. New Generation Opportunity		
Output	Activities	
4.1 Youth engagement	4.1.1	Youth-targeted promotion, communication and knowledge sharing
	4.1.2	Strengthen rural youth organizations
4.2 Youth employment	4.2.1	Incentives to livestock farmers and agribusiness to employ youth

	4.2.2	Livestock business in-service training of youth
4.3 Skills and competencies	4.3.1	Strengthen rural training institutions
	4.3.2	Provide scholarships and training assistance to fill skills gaps
4.4 Inclusion of women	4.4.1	Develop the roles of women in the livestock industry
	4.4.2	Increase the number of women in technical, field advisory, research and management roles in the MOA
4.5 Access to land and finance for youth and women	4.5.1	Facilitate young people to access land for livestock activities
	4.5.2	Small business training for young livestock farmers and entrepreneurs
	4.5.3	Young farmers mentoring scheme

6.4.1 Activities related to Output 4.1: Youth engagement

163. These activities will be implemented by MOA in collaboration with the Ministry of Labor (MOL), Youth (MOY), Education (MOE) and FCLC.

164. **4.1.1 Youth-targeted promotion, communication and knowledge sharing.** The Strategy will support the design and implementation of activities using information, communication technologies (ICT) such as website development, social media and mobile phone applications to promote opportunities for youth in the livestock sector, and to disseminate technical advice including on production, veterinary medicine, and marketing.

165. **4.1.2 Strengthen rural youth organizations.** The Strategy will support implementation of rural youth livestock activities in partnership between the MOA and MOY. Activities will include livestock industry events, competitions and activities targeting, and implemented by youth groups, and promote links with young farmer organizations abroad³³. The Strategy will support the FCLC to establish a young farmers' representative and supporting communication program. The Strategy will establish and fund a national system of merit awards for young livestock farmers selected on a regional basis.

Table 39: Output 4.1 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
4.1.1	Program funds	Annual sum lump	5	100	500
4.1.2	Program funds	Annual sum lump	5	100	500
TOTAL					1,000

6.4.2 Activities related to Output 4.2: Youth employment

166. These activities will be implemented by MOA in collaboration with the MOL and MOE.

167. **4.2.1 Incentives to livestock farmers and agribusiness to employ youth.** The Strategy will support a wage subsidy scheme for livestock farmers and businesses to employ people under 25 years old. The details of the subsidy will be determined by government, but may include a subsidy for full-time employees for a period not less than six months and up to

³³ For example the NZ Young Farmers organization, www.youngfarmers.co.nz

one year. The subsidy may use mechanisms such as a reimbursable grant, or a tax deduction of 200% on youth wages.

168. **4.2.2 Livestock business in-service training of youth.** The Strategy will provide eligible livestock businesses a subsidy or matching grant on the cost of accredited vocational training related to farm mechanization, animal health and husbandry, food safety, farm infrastructure, farm business management, etc.

Table 40: Output 4.2 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
4.2.1	Employee wage subsidy	Employee subsidy	2,500	2	5,000
4.2.2	Employee training subsidy	Course	1,000	0.5	500
TOTAL					5,500

6.4.3 Activities related to Output 4.3: Skills and competencies

169. These activities will be implemented by MOA in collaboration with the Ministry of Employment and Ministry of Education.

170. **4.3.1 Strengthen rural training institutions** to provide transformative skills and experience for young livestock farmers. The Strategy will provide partner support for the development and implementation of livestock related programs in appropriate institutions including the Tutu Rural Training Centre, the Navua Agricultural Training Institute³⁴, the APTC, FNU and other rural training providers. The Strategy will support curriculum development for competency-based training in collaboration with FCLC, and establishment of partner arrangements to deliver training courses under intellectual property rights accredited abroad.

171. **4.3.2 Provide scholarships and training assistance to fill skills gaps.** The Strategy will provide scholarships for accredited qualifications in academic and vocational areas to fill gaps and specific needs that have been identified by the FCLC and the MOA human resources development section.

Table 41: Output 4.3 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
4.2.1	Matching grants	Grant	10	100	1,000
4.2.2	Scholarships	Course	100	20	2,000
TOTAL					3,000

6.4.4 Activities related to Output 4.4: Inclusion of Women

172. These activities will be implemented by MOA in collaboration with the PSC and the Ministry of Women (MOW).

³⁴ Established by Grace Road Food Co. 2015

173. **4.4.1 Develop the roles of women in the livestock industry.** The Strategy will Support the development and implementation of programs managed by women and tailored to improving the roles and participation of women in the livestock sector. The support will be provided on the tender basis and will be open to industry groups, NGOs and government agencies.

174. **4.4.2 Increase the number of women in technical, field advisory, research and management roles in the MOA.** The Strategy will require the MOA to establish and meet gender inclusion targets through recruitment, training of existing employees, and promotion. A key aim is to increase the number of women employed as extension advisors who will work directly with the increasing number of women in the livestock industry.

Table 42: Output 4.4 Cost estimates

Activity	Item	Unit	Quantity	Unit cost (FJD '000)	Cost (FJD '000)
4.4.1	Women's development programs	grant	50	20	1,000
4.4.2	Wages and training	Job Position	100	50	5,000
TOTAL					6,000

6.4.5 Activities related to Output 4.5: Access to land and finance for youth and women

175. These activities will be implemented by MOA in collaboration with FCLC, NCSMED, Ministry of Youth, the Ministry of Women (MOW), and TLTB.

176. **4.5.1 Facilitate young people to access land for livestock activities.** The Strategy will support initiatives by government agencies, FCLC, rural training institutes and NGOs that facilitate young people to gain secure access to land for livestock activities³⁵. Mechanisms for accessing land may include contract farming.

177. **4.5.2 Small business training for young livestock farmers and entrepreneurs.** The Strategy will provide training scholarships to youth and women interested in livestock farming and livestock business. The training will aim to result in skills for business planning, financial management and qualification for loans from FDB and commercial banks³⁶.

178. **4.5.3 Young farmers mentoring scheme.** The Strategy will provide support for young livestock farmers and entrepreneurs to access mentoring services provided through FCLC and potentially linked into mentoring schemes operating in New Zealand (NZ)³⁷.

Table 43: Output 4.5 Cost estimates

Activity	Item	Unit	Quantity	Unit cost	Cost
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³⁵ The 'Million Dollar Farmer' program by the Ministry of Youth, and the IFAD 'Highland Agribusiness' project, are examples to provide lessons learned for the design, implementation mechanisms, and management of this strategy initiative.

³⁶ An example of the training is the NCSMED small business courses

³⁷ For example, the rural business mentoring scheme operated by NZ's Primary Industry Capability Alliance <http://pica.org.nz/mature-workforce-31/mentoring/rural-mentor-2/>

				(FJD '000)	(FJD '000)
4.5.1	Program grants	grant	50	50	2,500
4.5.2	Training	course	100	5	500
4.5.3	Mentoring	course	100	5	500
TOTAL					3,500

Annex 1 : Implementation Priorities

179. The Livestock Strategy Validation Workshop prioritized the Strategy activities according to what they perceived as immediately important (short-term), and what may be achieved in the long term. Note this is not a project management schedule but may be used as a guide for budget allocations.

Short Term (1 year)	Medium Term (2-3 years)	Long Term (4-5 years)
Outcome 1: Improved Governance		
1.1.2 Regulatory reform to improve quality assurance in the feed industry.	1.1.1 Regulatory reform to improve quality, safety and animal welfare compliance	1.3.1 Human resource development.
1.1.3 Regulatory reform to promote modern animal health products and veterinary medicines and their safe and effective use.	1.1.5 Upgrade and expand analytical laboratory capacity.	1.3.2 Upgrade service facilities.
1.1.6 Review legislation pertaining to the livestock industry.	1.2.2 Institutionalize industry consultation.	1.3.3 Strengthen performance assessment and performance-based promotion in the MOA.
1.2.1 Strengthen meat and livestock industry representative organization.	1.4.4 Public-private partnerships.	1.3.4 Public-private partnerships in service delivery.
1.4.1 Tax and duty concessions.	1.4.3 Establish matching grants.	1.4.2 Establish R&D funds.
Outcome 2: Competitive Value Chains		
2.6 Feeds	2.4 Market development	2.1 Innovation
2.5 Finance	2.3 Business confidence	2.2 Quality and safety
Outcome 3: Sustainability and Resilience		
3.1.2 Promote whole farm planning.	3.1.3 Disaster preparedness measures.	3.1.1 R&D to promote stress tolerant breeds.
3.1.4 Strengthen veterinary and para-vet services.	3.2.2 Strengthen ability to comply with environmental standards.	3.5.1 Strengthen remote area food chain.
3.2.4 Adapt and adopt regional industry environmental standards.	3.2.3 Promote use of biogas and other effluent management systems.	
3.4.1 Extension on good practices.	3.3.1 Develop insurance.	3.3.2 Financing mechanism for livestock insurance.
3.5.2 Promotion of small livestock for household food security.		
Outcome 4: New Generation Opportunity		
4.1 Youth engagement.	4.2 Youth employment.	4.4 Inclusion of women.
4.5 Access to land, finance and mentoring for youth.	4.3 Skills and competencies.	

Annex 2: Development Partner Initiatives

180. A number of development partners have programs underway or planned related to the livestock sector. These programs would be considered in the packaging and financing of the Livestock Strategy. The World Bank (WB) is currently designing a program of assistance for the agriculture and livestock sectors in Fiji. This funding facility is scheduled for implementation in 2016 and preparatory work by the Bank and the Government of Fiji has already started. This Strategy would provide a valuable, up-to-date resource to the Bank in developing the design of the project's livestock component and be of strategic assistance to Fiji's livestock industry.

Table 44: Major Recent and Planned Development Assistance to the Livestock Sector

Partner Program	Project	Implementing partners	Status
EU Accompanying Measures for Sugar Protocol Countries (AMSP)	Improvement of Key Services to Agriculture	ITC, FCLC	2012 – 2016
EU AMSP	Improvement of Key Services to Livestock and Livestock Products	ITC, FCLC	2013 – 2016
EU AMSP	Pacific Agricultural Policy Project (Regional) <ul style="list-style-type: none"> Fiji Livestock Strategy preparation 	SPC MOA	2013 – 2016
EU 11 th EDF Program	Market-driven agriculture development in the sugar belt	MOA	2016 – 2017
Pacific Horticulture & Agriculture Market Access Phase II (PHAMA) Funded by Australia and New Zealand governments	(Regional). <ul style="list-style-type: none"> Fiji Honey bee health survey (completed) Fiji Poultry health survey (2015) 	SPC MOA	2013 – 2017
New Zealand – Fiji bilateral assistance program	Fiji Dairy Industry Development Initiative	MOA FDL FCDCL	2015 – 2020
IFAD Fiji country program	Fiji Agricultural Partnerships Program <ul style="list-style-type: none"> Highland agribusiness 	MOA	2015 – 2019
World Bank Fiji country program	<ul style="list-style-type: none"> Livestock project under preparation 	To be confirmed	To be confirmed

Annex 3: Cost Estimates

Outcome	Activity	Output	COST ESTIMATES FJD '000						
			Item	Unit	Quantity	Unit cost	Cost		
1. Improved Governance									19,215
	1.1 Improved regulation							1,265	
	1.1.1	Regulatory reform to improve quality, safety and animal welfare standards compliance	Expert: legal	person month	1	20	20		
	1.1.2	Regulatory reform to improve quality assurance in the feed industry	Expert: legal	person month	1	20	20		
	1.1.3a	Regulatory reform to promote modern animal health products and veterinary medicines and their safe and effective use	Expert: legal	person month	1	20	20		
	1.1.3b	as above	Industry consultation	annual lump sum	5	4	20		
	1.1.4	Strengthen protection from dumping, unfair competition and biosecurity risk	operations	annual lump sum	5	1	5		
	1.1.5a	Upgrade and expand analytical and laboratory capacity	Expert: laboratory	person month	3	20	60		
	1.1.5b	as above	equipment	lump sum	1	500	500		
	1.1.5c	as above	facilities	lump sum	1	500	500		
	1.1.5d	as above	training	course	10	2	20		
	1.1.6	Review legislation and regulation	technical assistance	person month	5	20	100		
	1.2 Industry leadership, inclusion and participation							250	
	1.2.1	Strengthen the meat and livestock industry representative organization	operations	annual lump sum	5	40	200		
	1.2.2	Institutionalize industry consultation in policy, regulation, planning, implementation, and research prioritization	operations	annual lump sum	5	10	50		
	1.3 Improved services capacity							3,500	
	1.3.1	Human resource development and increase number of women in technical, professional and managerial positions	training	course	250	2	500		
	1.3.2	Upgrade service facilities	operations	annual lump sum	5	400	2,000		
	1.3.3	Strengthen the performance assessment system and performance-based promotion in the MOA	salary increment	grade	500	1	500		
	1.3.4	Public-private partnerships in service delivery	PPP services	contract	25	20	500		

1.4 Investment incentives							11,500
1.4.1	Tax and duty concessions	tax incentive	annual concession	5	1,000	5,000	
1.4.2	Establish R&D funds	fund payment	annual lump sum	5	100	500	
1.4.3	Matching grants	grant	annual lump sum	5	1,000	5,000	
1.4.4	Public-private partnerships	service contract	contract	25	40	1,000	
1.5 Effective implementation							2,700
1.5.1a	Livestock Strategy implementation secretariat and Implementation Committee.	secretariat	annual lump sum	5	300	1,500	
1.5.1b	as above	implementation expert	person month	15	40	600	
1.5.2	Improve meat and livestock policy analysis, monitoring and evaluation	Technical assistance	person month	15	40	600	
2. Competitive Value Chains							29,840
2.1 Innovation							10,950
2.1.1	R&D on priorities identified by industry	Annual R&D workshop	workshop	5	10	50	
2.1.2	Competitive grant funds financed by industry contributions and government	as per 1.4.2				0	
2.1.3	Participatory research, evaluation and dissemination	Expert: legal	Person month	1	20	20	
2.1.4	Strengthen R&D capacity and professionalism	Technical assistance	Lump sum	5	20	100	
2.1.5a	Strengthen links between research providers	Institution development mentoring	Lump sum	1	100	100	
2.1.5b	as above	Start-up investment	Lump sum	1	10,000	10,000	
2.1.6a	Strengthen knowledge management, knowledge sharing	IT equipment	Lump sum	1	500	500	
2.1.6b	as above	Expert: knowledge management	Person month	4	20	80	
2.1.6c	as above	Expert: knowledge management	courses	50	2	100	
2.2 Quality and Safety							1,050
2.2.1	capacity for quality and safety management	Matching grants for training and services	Annual lump sum	500	2	1,000	
2.2.2	Regulatory reform to improve compliance	Cost in 1.1.1 and 1.1.2				0	
2.2.3	Expand and upgrade facilities	Cost in 1.4.3, 1.4.4 and 2.5				0	
2.2.4	Grading and QA schemes	Workshops	Workshop	5	10	50	
2.3 Business confidence							360
2.3.1a	Strengthen value chain linkages	Expert: Market linkage/ contract farming	Person-months	6	20	120	
2.3.1b	as above	Workshops	Workshop	20	2	40	
2.3.2	Training in farming as a business	Farm management service	Farm plans	100	2	200	
2.4 Market development							15,800
2.4.1	Product development and promotion	Matching grants	Matching grant	250	20	5,000	
2.4.2	Infrastructure for markets, access, and logistics	Public-private partnership	PPP	10	1,000	10,000	
2.4.3	Trade and market access protocols	Protocol research, surveys and negotiation	Annual lump sum	5	100	500	

2.4.4	Market intelligence	Operational support and wages	Person-months	60	5	300	
2.5 Finance							1,580
2.5.1	Business skills training	Training	course	20	50	1,000	
2.5.2	Development of agri-finance products	Expert: Agri-finance	Person-months	1	40	40	
2.5.3	Strengthen FDB capacity to finance livestock industry development	Expert: Agri-finance	Person-months	1	40	40	
2.5.4	Foreign investment facilitation	Investment services	Annual lump sum	5	100	500	
2.6 Feeds							100
2.6.1	Promote the Feed Bill, monitoring program, and voluntary certification	Awareness campaign	Annual lump sum	2	50	100	
2.6.2	R&D to develop commercial value chains for local feed resources	R&D competitive grants – see 1.4.2					
2.6.3	R&D with agribusiness to develop commercial production of feeds	R&D competitive grants – see 1.4.2					
3. Sustainability and Resilience							23,230
3.1 Improved resilience and risk management							14,000
3.1.1	R&D to promote stress tolerant breeds and feed resources	R&D	grants	10	250	2500	
3.1.2	Promote whole-farm planning	Farm management service	Farm plans	500	2	1000	
3.1.3	Disaster monitoring and preparedness measures	Disaster fund	Fund facility	1	10,000	10,000	
3.1.4	Strengthen veterinary services	Annual training and monitoring	annual lump sum	5	100	500	
3.2 Sustainable use of natural resources							5,300
3.2.1	Development of rangeland management code of practice guide	Policy grant	grant	1	50	50	
3.2.2	Strengthen ability to comply with environmental safeguards	EMP services	plans	100	2	200	
3.2.3	Promote use of biogas and other effluent management systems	Matching grants	Effluent systems	1,000	5	5,000	
3.2.4	Adapt and adopt regional dairy industry environmental standards	Policy grant	grant	1	50	50	
3.3 Insurance							1,080
3.3.1	Develop insurance schemes for the livestock sector.	Agri-finance expert	Person-months	2	40	80	
3.3.2	Financing mechanisms for livestock insurance premiums and claims	Insurance fund	Fund facility	1	1,000	1,000	
3.4 Good practices							1,100
3.4.1	Extension on good practices	GAP extension program	Annual	5	100	500	
3.4.2	Promotion of organic practices for livestock	Technical assistance and training	annual lump sum	3	100	300	
3.4.3	Promotion of market-preferred certification options	Advisory services	Annual lump sum	3	100	300	
3.5 Food security							1,750
3.5.1	Strengthen remote area local livestock food chains	Matching grants	Grant	20	50	1,000	
3.5.2	Promotion of small livestock for household food security	Training	Course	100	5	500	
3.5.3	Measures to discourage import of livestock products that contribute to non-communicable disease.	operations	Annual lump sum	5	50	250	

4. New Generation Opportunity								19,000
4.1 Youth engagement							1,000	
4.1.1	Youth-targeted promotion, communication and knowledge sharing	Program funds	Annual lump sum	5	100	500		
4.1.2	Strengthen rural youth organizations	Program funds	Annual lump sum	5	100	500		
4.2 Youth employment							5,500	
4.2.1	Incentives to livestock farmers and agribusiness to employ youth	wage subsidy	Employee	2,500	2	5,000		
4.2.2	Livestock business in-service training of youth	training subsidy	Course	1,000	0.5	500		
4.3 Skills and competencies							3,000	
4.3.1	Strengthen rural training institutions	Matching grants	Grant	10	100	1,000		
4.3.2	Provide scholarships and training assistance to fill skills gaps	Scholarships	Course	100	20	2,000		
4.4 Inclusion of women							6,000	
4.4.1	Develop the roles of women in the livestock industry	Women's development programs	grant	50	20	1,000		
4.4.2	Increase the number of women in technical, field advisory, research and management roles in the MOA	Wages and training	Job Position	100	50	5,000		
4.5 Access to land and finance for youth and women							3,500	
4.5.1	Facilitate young people to access land for livestock activities	Program grants	grant	50	50	2,500		
4.5.2	Small business training for young livestock farmers and entrepreneurs	Training	course	100	5	500		
4.5.3	Young farmers mentoring scheme	Mentoring	Course	100	5	500		
TOTAL								91,285