Corporate Plan
2020 - 2024

Scientific Research Organisation of Samoa

Corporate Plan FY2020 – 2021 to FY2023-2024

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Foreword

Minister for the Scientific Research Organisation of Samoa

"There are those who look at things the way they are, and ask why… I Dream of things that never were, and ask why not?" - Robert F. Kennedy

Hon Lopao'o Natanielu Mu'a

I am pleased to present the Scientific Research Organisations Corporate Plan 2020 -2024. Scientific research has its role in driving the economic growth in Samoa, which in turn supports Samoa's standards of living. Because of these responsibilities, the Organisation has a central role in promoting a national integrated research approach to drive the economy.

I am a firm believer in the words of President Robert F. Kennedy, "There are those who look at things the way they are, and ask why, I dream of things that never were, and ask why not? Samoa's operating environment is changing rapidly and SROS cannot be complacent but needs to provide services to meet and navigate the changes in the economy and use established and innovative technologies to drive Samoa's productivity and competitiveness.

SROS works to implement and support the Government's strategy for the Development of Samoa by providing the research, training and analysis required for competitive research, market opportunities and to provide a foundation for scientific research in Samoa. SROS also plays an important role in delivering trusted and efficient services to businesses. Our efforts depend on connecting needs across government and maintaining strong relationships with local businesses, the science community and our clients.

We are committed to working directly with the community to resolve real-world problems and to seize opportunities together. SROS will work to implement and communicate programs that create an environment that supports growth across all sectors in Samoa. A key aspect of our work will be to continue to deliver valuable services to the community, work closely with partners across government to ensure that Samoans are able to access the seamless, effective services that they need quickly and easily.

I am committed to continuing to lead a safe, inclusive and diverse organisation. SROS embraces the diverse backgrounds, life and work experiences of our staff to enhance the richness of our workplace.

We intend to put effort into building the appropriate capabilities, connections and cultures with our key areas in science so that we can be an effective tool to promote a dynamic and successful Samoan economy.

I would like to wish the Chairman and Board of Directors, Management and Staff of SROS and all Stakeholders involved to have dignity and to put your best foot forward to achieve the corporate plan objectives.

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Honourable Lopao'o Natanielu Mu'a
Minister

1. Executive Summary

The Scientific Research Organisation of Samoa was established in 2006 by the Government of Samoa, with the original vision that it will contribute to the GDP through the production of value-added products and renewable energy options to replace imports. Combined with the innovative visions of SROS scientists and the drive from the private sector, this was visualized to lead to optimal utilisation of locally available resources for the betterment of the people of Samoa.

SROS is structured into four technical divisions that carry out broadly grouped research activities, and is supported by the corporate services division. SROS achieved a 93% completion of activities in its last corporate plan, indicative of a strong objective-driven workforce. In addition to its reliable delivery of project milestones and increasing technical publication profile, SROS has fostered a strong reputation for scientifically robust research, encouraging continual research grant funding. The financial affairs of the organisation has been kept in order and compliant with the Government's requirements. Financial audits, reporting and reviews by parliamentary finance and expenditure committee has ensured transparency and accountability of the organisation.

1.1 Vision Statement

To develop Samoa through science, technology and innovation

1.2 Mission Statement

To drive, promote and improve the development of Samoa through research in the relevant economic sectors

1.3 Strategic Issues

The Organisation has evolved its Vision and Mission Statements to remain relevant with its research activities, though the organisation's expanded research activities bring with it strategic issues that could impede the achievement of corporate objectives and strategies. The organisation continues to grow, and it must adapt to the growing areas of research, evolve with the research requirements of the country, and address strategic issues that hinder its progress. More specifically, the organisation grows through consciously increasing the capacity of its human personnel, continually developing its research facilities, maintaining open lines of communication to international research, strengthening its partnerships with the private sector and expanding its base of donor funded research. These strategic issues will be expanded on in section 4.

1.4 Corporate Objectives

The SROS corporate plan 2020-2024 is based on the needs and values of the SROS stakeholders. In addition, the Corporate Plan is aligned to the Strategies for the Development of Samoa (SDS 2016-2020) and to sector plans of relevant development and economic sectors in Samoa. As a result of the above, the SROS corporate plan 2020-2024 has nine (9) objectives formulated to drive and guide the research and development activities of SROS, to support and develop Samoa through science, technology and innovation.

i. To undertake scientific and technical research with the primary aim of adding value and developing functional prototypes of products and processes for the local or overseas markets
ii. To provide relevant technical and quality testing services in goods, food & food products, narcotics, biological and environmental samples
iii. To investigate research pathways utilizing local resources for renewable energy generation and conduct environmental monitoring and impact assessments
iv. To enhance the potential of Samoan natural products through biomedical, cosmetic and pharmaceutical research
v. To improve agricultural production, postharvest techniques and establish effective pest & disease control measures
vi. To engage in consultancy services to improve the various development sectors and promote science as a subject/career
vii. To strengthen the partnership with the private sector and stakeholders to support the commercialisation of the Organization's prototypes
viii. To ensure the effective staff development in scientific research and support services
ix. To effectively manage the Organisation's financial, IT, human resources and assets

1.5 Major Changes Anticipated 2020 - 2024

With the goal to continue growing and expanding, there are several anticipated major changes for SROS over the next four (4) years. These include:

(i) The establishment of a commercial arm for the organisation;
(ii) The incorporation of agricultural research as a new Division into SROS;
(iii) The creation of a Food Innovation Centre;
(iv) The expansion of technical services into testing biological samples; and
(v) The designing and building of a battery prototype for solar energy storage, based on a design developed by Thomas Edison and patented in 1906.

The above is further discussed in Section 7.

2. Mandate

SROS is a public beneficiary body constituted and operating under the provisions of the;

- Public bodies (Performance and accountability) Act 2001
- Research and development Institute of Samoa Act 2006 (the Principal Act)
- Scientific Research Organisation of Samoa Act 2008
- Labour and Regulations Act 2013
- Public Finance Management Act 2001
- Companies Act (2001)

SROS also adheres to specific reporting requirements to government expected of the public bodies as laid out by the Ministry for Public Enterprises and Ministry of Finance.

3. Corporate Profile

3.1 SROS History

The Public Beneficiary Body was established in 2006 and was known as the Research and Development Institute of Samoa (RDIS) mandated under the principal Act, the Research and Development Institute of Samoa (RDIS) Act 2006. Further amendments to its objectives and functions were enacted in 2008 and its name subsequently changed to the Scientific Research Organisation of Samoa (SROS) under the Scientific Research Organisation of Samoa Act 2008. Ultimately, SROS' had the key function to provide scientific and technical research, and develop technologies that would add value to the goods and services provided by the private and public sectors, and ultimately contribute to the national economy of Samoa.

3.2 Organisational Structure

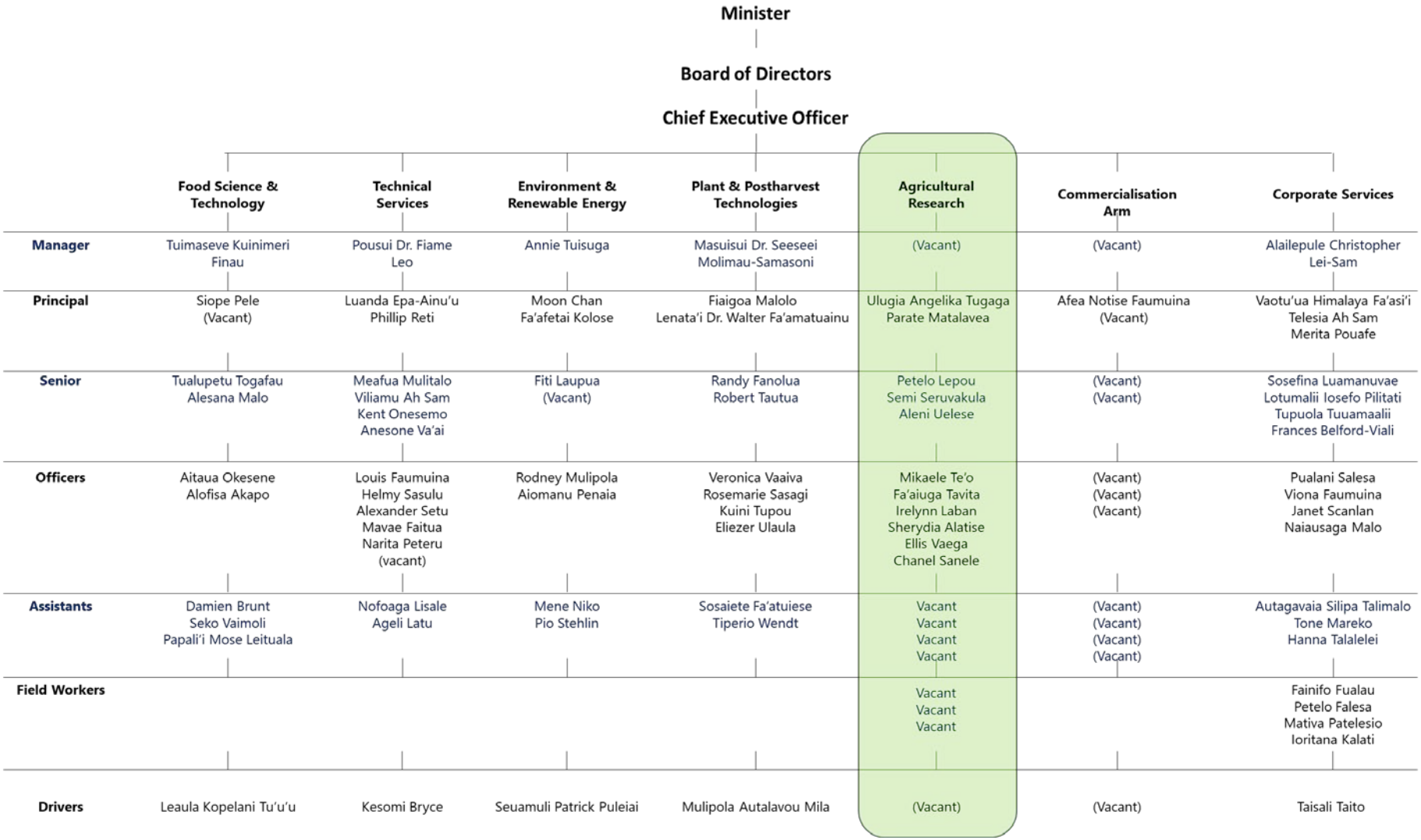
SROS has a Board of Directors with membership comprising five representatives from the private sector to conform to the Composition of the Boards of Public Bodies Act 2001. As of March 2020, the SROS board members included Maposua Sulamanaia Montini Ott (Chair), Nive Tauiliili, Masoe Leilua Iosefa Tautua, Tusani Iosefa Reti and Professor Asiata Dr. Satupaitea Viali.

The Board of Directors of SROS performs the following functions:

- Ensure the proper and efficient performance of the functions of SROS;
- Determines the policy of SROS with respect to any matter;
- Gives directions relating to the administration of the SROS Act 2008 to the Chief Executive Officer ; and ,
- Such other functions as are conferred on it by the SROS Act 2008.

The Chief Executive Officer (CEO) as a non-voting Board member is responsible for leading and managing employees of SROS in accordance with requirements determined by the Board. Assisting the CEO are the Divisional managers, and together they form the Management team that assists the CEO in managing the research, development and operational activities of SROS.

SROS comprises four technical divisions, namely Environment and Renewable Energy Division (ERED), Plant and Postharvest Technologies Division (PPTD), Food Science and Technology Division (FSTD) and Technical Services Division (TSD), which are supported by the Corporate Services Division (CSD).



	Food Science & Technology	Technical Services	Environment & Renewable Energy	Plant & Postharvest Technologies	Agricultural Research	Commercialisation Arm	Corporate Services
Manager	Tuimaseve Kuinimeri Finau	Pousui Dr. Fiame Leo	Annie Tuisuga	Masuisui Dr. Seeseei Molimau-Samasoni	(Vacant)	(Vacant)	Alailepule Christopher Lei-Sam
Principal	Siope Pele (Vacant)	Luanda Epa-Ainu'u Phillip Reti	Moon Chan Fa'afetai Kolose	Fiaigoa Malolo Lenata'i Dr. Walter Fa'amatuainu	Ulugia Angelika Tugaga Parate Matalavea	Afea Notise Faumuina (Vacant)	Vaotu'ua Himalaya Fa'asi'i Telesia Ah Sam Merita Pouafe
Senior	Tualupetu Togafau Alesana Malo	Meafua Mulitalo Viliamu Ah Sam Kent Onesemo Anesone Va'ai	Fiti Laupua (Vacant)	Randy Fanolua Robert Tautua	Petelo Lepou Semi Seruvakula Aleni Uelese	(Vacant) (Vacant)	Sosefina Luamanuvae Lotumalii Iosefo Pilitati Tupuola Tuuamaalii Frances Belford-Viali
Officers	Aitaua Okesene Alofisa Akapo	Louis Faumuina Helmy Sasulu Alexander Setu Mavae Faitua Narita Peteru (vacant)	Rodney Mulipola Aiomanu Penaia	Veronica Vaaiva Rosemarie Sasagi Kuini Tupou Eliezer Ulaula	Mikaele Te'o Fa'aiuga Tavita Irelynn Laban Sherydia Alatise Ellis Vaega Chanel Sanele	(Vacant) (Vacant) (Vacant)	Pualani Salesa Viona Faumuina Janet Scanlan Naiausaga Malo
Assistants	Damien Brunt Seko Vaimoli Papali'i Mose Leituala	Nofoaga Lisale Ageli Latu	Mene Niko Pio Stehlin	Sosaiete Fa'atuiese Tiperio Wendt	Vacant Vacant Vacant Vacant	(Vacant) (Vacant) (Vacant) (Vacant)	Autagavaia Silipa Talimalo Tone Mareko Hanna Talalelei
Field Workers					Vacant Vacant Vacant		Fainifo Fualau Petelo Falesa Mativa Patelesio Ioritana Kalati
Drivers	Leaula Kopelani Tu'u'u	Kesomi Bryce	Seuamuli Patrick Puleiai	Mulipola Autalavou Mila	(Vacant)	(Vacant)	Taisali Taito

* Green highlight: new division pending Cabinet Approval

3.3 Functions of the Organisation

The main function of SROS is to provide scientific and technical research, and develop technologies that would add value to the goods and services provided by the private and public sectors, and ultimately contribute to the national economy of Samoa. These key functions are delivered through specific prescribed activities of the Technical Divisions of SROS. Other functions of the Organisation include additional Cabinet Directives and other related government laws.

Environment and Renewable Energy Division

Responsible for research into pathways which utilize local resources for renewable energy generation, and conducting of environmental monitoring assessments to minimize potential development impacts on Samoa's natural resources.

Plant and Postharvest Technologies Division

Responsible for research and development on plant resources and technologies with commercial, medicinal and export potentials, with a particular focus on the development and application of relevant postharvest technologies to minimize losses, ensure food security as well as enhancing the utilization of plant resources for biomedical research, which could improve prospects of the national economy.

Food Science and Technology Division

Responsible for research on food material to develop appropriate technologies to advance commercial prospects in new product development prototypes, packaging and food preservation, sensory and agro-processing that would improve prospects of the national economy

Technical Services Division

Responsible for the provision of relevant technical and quality services to goods, food and food products to ensure excellent quality, food safety and suitability for trade. It is also responsible for narcotics analysis for the purposes of investigations and prosecutions of offences.

Corporate Services Division

Responsible for finance, human resources management, information technology, marketing, administration functions and general operations.

At present, SROS is core funded by Government in its annual budget, with a commitment to continuously strengthen its earning capacity through the provision of technical services and consultancies, to provide some level of self-sufficiency and lessen its dependency on Government funding. New revenue streams are being sought from the commercialisation of key research outcomes to establish operations in partnership with business and industry stakeholders, and our communities. SROS also seeks Government funding support and external funding donors to finance its scientific research programs and projects.

4. Strategic Issues

4.1 Human resources

One of the main issues in sustaining steady operations of the organisation is the availability of competent staff from Samoa's small base of qualified people. Although Samoa has had an increase in generating scientists compared to 20 years ago, the on-going improvement in technologies and methodologies has necessitated continuous capacity building programs to keep present personnel up-to-date and the need for a steady influx of new graduates.

With the fast development of Samoa's businesses especially in the area of food production and analysis, there is notable competition for qualified staff; SROS with a strong pool of specially trained staff becomes the hub to acquire uniquely skilled personnel, leading to high staff turnover. To address this, SROS has implemented attractive staff remuneration. In addition, the steady improvement of the organisation's facilities encourages a continually challenging and learning working environment; for scientists who are interested in continually learning, SROS is providing them with an environment conducive to career growth. SROS also continues to recruit and develop a high calibre of scientists who are knowledgeable in their respective fields and committed to developing Samoa.

4.2 Research facilities

The advancements in science today leading to the increase in the quality of equipment and the requirement for continuous equipment maintenance puts a burden on SROS operational costs; this is exacerbated by our isolated location and the need to import sophisticated machines required for research. SROS actively monitors equipment performance and deem equipment obsolete once their maintenance costs exceed that of a new machine. The organisation is able to offset the need for some of the required equipment by building partnerships with universities and research institutes with complementary research interests; this also encourages transparency and trust among researchers. With the growing need for sophisticated equipment to meet the overwhelming requests from an array of clients, SROS continues to seek financial assistance for asset and equipment purchase from overseas donors.

4.3 Communication

Keeping abreast of new scientific knowledge is paramount to driving the research organisation. SROS ensures that only relevant applications of such technological advancements are pursued to develop science, technology and innovation in Samoa. Care must be taken to communicate accurately and effectively to the public sphere and for contentious issues to be delicately handled. There is a need for the organisation to be proactive in raising awareness of the organisations growing potential and path it is going to take. In going forward, the organisation needs to be proactive in portraying the significance of their work to entice the relevant climate of support. The organisation also has to maintain a delicate balance in the type of information it shares, to ensure it provides information to the public and stakeholders, without compromising its intellectual property capabilities.

4.4 Public Private Partnerships

Since its inception, the goal has been for SROS to serve as a research hub for the development of prototypes and new value-added products which were expected to be commercialized by the private sector and companies. However, to this day, apart from the frozen crops research which has been successfully up-taken by many exporters, many other developed products have not been so successful. The private sector are not prepared to take the risks associated with commercialising new products with under-studied market and target consumers.

4.5 Research Funding

Although SROS is strongly supported by Government funding, the government grant is only sufficient to finance operational expenses and personnel remuneration. However, the organisation has to actively seek research grant funding to finance its research activities as per its mandate, directives from government, Board and stakeholders. This is a very competitive undertaking, and SROS is relatively young compared to other well established research institutes and organisations. This therefore remains a challenge.

4.6 COVID 19

The COVID-19 global pandemic declared in March 2020 and the far-reaching effects of COVID-19 pose some threats to the planned strategies for the organisation. For instance, the ban on overseas travel of government official has meant reduced training opportunities for SROS scientists. In addition to this, the Organisation has also been unable to attend important official meetings that would have facilitated the push for the achievement of some of its objectives. Furthermore, reduced air travel has had an impact on how quickly overseas orders reach Samoa, which impacts how quickly the organisation can achieve its milestones. Moreover, SROS has become the standby testing facility for COVID 19, which has meant some of the organisation's staff members have to be diverted to this task and forego or put on hold their original research duties.

4.7 SWOT Analyses

Strengths

- Strong Government support and interest to boost national economic development.
- Strong alignment with the Government's Strategy for the Development of Samoa.
- Continually improving laboratories and facilities.
- Internationally recognised status with IANZ.
- Qualified and capable local staff.
- Partnerships with international universities and research providers to enhance research quality and staff training.
- Growing reputation for private sector and government agency support through consultancies.

Weaknesses

- Continual reliance on Government funding.
- High cost of technical analyses.
- Some reliance on external supply of raw materials for research projects.
- Dependence on overseas suppliers for many laboratory supplies and equipment.
- Adverse foreign exchange fluctuations impacting overseas payments for supplies and services.
- Reliant on partnership with other research organisations to access most funding.

Opportunities

- Essential testing services required by Government and exporters.
- Potential high- value markets overseas for healthy food from exotic locations.
- Potential high-value markets overseas composing of expatriates from Samoa and other Pacific islands.
- Government initiatives to revitalise agriculture.
- Urgent needs for sustainable energy technologies to mitigate the impact of climate change.
- Abundance of underutilised biological resources for the development of products to increase exports and imports substitutions.
- Recognition by other regional and international organisations as a competent research partner.

Threats

- Funding sustainability for research projects
- Competition from other Government ministries/ departments and regional research organisations for research funding and development assistance.
- International consultants.
- Insufficient and inconsistent supply of local raw materials required for research and business development.
- Staff and expertise retention.

5. Corporate Objectives, Strategies & Performance Measures

Strategy	Activity	Performance Measure
Corporate Objective 1: To undertake scientific and technical research with the primary aim of adding value and developing functional prototypes of products and processes for the local or overseas markets		
S1.1 Upgrade and expand existing facilities, equipment and technological infrastructure to create an open access Food Innovation Centre for the country	A1.1.1 Identify and consult with relevant stakeholders to ascertain national food value adding needs	• Report on stakeholder consultation produced and distributed by June 2021
	A1.1.2 Prepare a complete proposal to secure funding and submit to development partners and/or Cabinet	• Full proposal submitted to developments partners and/or Cabinet by December 2020
	A1.1.3 Build an extension to the existing product development building to cater for a wider range of processes and products	• The Food Innovation Centre is built to standard by June 2022
	A1.1.4 Acquire the necessary equipment (eg. pasteuriser, aseptic packaging, homogenizer) and technological infrastructure	• The Centre is fully equipped and operating by December 2022
	A1.1.5 Establish procedures and processes for stakeholders to access and use the facility and associated resources for value added development and trials	• Clear guidelines in place for facility and resources access and use by June 2023

S1.2 Develop value added products that are in demand and align with current, and future food trends	A1.2.1 Identify key food trends for local and overseas markets (existing and potential) for planning of new product development activities	• A report(s) is compiled, and used for new product development plans
	A1.2.2 Research, develop and finalise a prototype of the fermented miki (miki mafu) for the export market	• Prototype product developed and tested in the market by December 2021
	A1.2.3 Research, develop and finalise flavoured fruit juice blends produced from various local fruits	• Prototype products developed and tested in the market by June 2022
	A1.2.4 Study the properties (sensory, nutritional and shelf life) of freeze dried mangoes, pineapples, pawpaw, banana, and lychee.	• Technical report submitted and value added products tested in the market
S1.3 Promote and actively participate in the teaching of food science and product development through the Food Innovation Centre	A1.3.1 Establish MOUs with two Universities with Food Science & Technology programs	• MOU's signed with two Universities by December 2021
	A1.3.2 Co-develop relevant student research and practical work to be undertaken	• One student studying Food Science & Technology is accepted every year for work experience and/or research
	A1.3.3 Design and implement relevant training programs for community groups (women, youth)	• Reports for two completed training disseminated by December 2023

	A1.3.4 Arrange and provide relevant training for the food industry using local and overseas experts and trainers	• Reports for two completed training disseminated by June 2024
S1.4 Strengthen and promote partnerships with existing and potential partners for research and development work	A.1.4.1 Continue support and implementation of the Trade Commerce, Industry & Manufacturing, EIF program for cocoa	• Technical report of cocoa value added products finalised and disseminated to stakeholders by 2022
	A1.4.2 Continue support and implementation for the ACIAR Cocoa tray fermentation comparative study	• Technical report finalised and disseminated by June 2021
	A1.4.3 Support PHAMA Plus program through the development of relevant value added products for the priority crops (nonu and taro) as requested by the stakeholders	• Report submitted on each activity implemented by June 2024
	A1.4.4 Support the SAFPROM program through value adding related activities for the identified farmers	• Technical report on activities implemented, submitted and disseminated by December 2024
	A1.4.5 Prepare and submit proposals developed through collaboration and supporting innovation, to development partners and donors	• At least two new proposals are accepted, and secure funding by December 2024

S1.5 Strengthen collaboration with entrepreneurs and businesses to develop new and innovative processes and products	A1.5.1 Promote the use of the equipment and services offered by the Food Innovation Centre to locals entrepreneurs and businesses	• Promotional material released by December 2021
	A1.5.2 Prepare MOUs for all collaborative product development/ research initiatives undertaken	• Signed MOU's for all collaborative initiatives undertaken with the private sector
	A1.5.3 Assist the marketing and promotional activities for new products	• Technical reports on all collaborative developments activities undertaken shared with relevant stakeholders

Strategy	Activity	Performance Measure
Corporate Objective 2: To provide relevant technical and quality testing services in goods, food & food products, narcotics, biological and environmental samples		
S2.1 Enhance and strengthen testing laboratories competence and capacities to provide relevant testing services in food safety and quality, illicit drugs for court, biotic and abiotic monitoring, and for the purpose of compliance to regulated standards as requested by private and public sectors.	A2.1.1: Upgrade testing laboratories to meet International standards and necessary security. A2.1.2: Upgrade staffs capacities and competency through appropriate trainings A2.1.3: To procure relevant updated analytical equipment with high throughput and multi-functions A2.1.4: Extend the scope of the International Accreditation to cover sample matrices requested by public and private sectors	• Completed Biological Testing Laboratory upgrade • Completed Narcotics Testing Laboratory upgrade • Completed trainings for at least two scientists in specific areas at overseas recognized testing laboratories, institutions or/and universities • At least one updated analytical equipment procured • At least one test methods accredited
S2.2 Assist livestock sub-sector of Agriculture sector on research into meat quality analysis for the local and overseas market	A2.2.1: In partnership with Ministry of Agriculture (MAF) and relevant stakeholders for biological and chemical analysis of meat to meet food safety and export market requirements.	• At least one test method developed specifically for meat quality analysis

S2.3 Assist fisheries sub sector of Agriculture sector on monitoring program to search for evidence on the impact of climate change on marine life.	A2.3.1: In partnership with Ministry of Agriculture and relevant stakeholders to compile a monitoring program focusing on the impact of climate change on marine life.	• At least one monitoring program established for selected villages reserve/conservational marine area.
S2.4 Assist the private sectors through relevant analytical tests required by the overseas market on their products.	A2.4.1 In partnership with the private sectors to improve the quality of their products to meet the required standards through quality and safety analysis.	• At least one company engaged SROS testing services for the exporting of their products.
S2.5 Assist Government Ministries, State Own Enterprises (SOE) and corporations with their research projects and regulation compliances	A2.5.1 Provide relevant testing services for government ministries, SOE and corporations as requested	• At least one Government Ministries, SOE's and Corporation engaged SROS testing services
S2.6 In collaboration with Corporate Service Division (CSD), engage promotional activities that will raise awareness on SROS Technical Services capacities and capabilities.	A2.6.1 To conduct awareness activities using various relevant form of media A2.6.2 Participate in local and overseas professional events including conferences, workshops, and meetings - to name a few, to create new networks and reinforce existing ones. A2.6.3 In collaboration with CSD, carry out a comprehensive Customer Survey	• At least one promotional activity completed. • At least one professional event attended. • At least one Annual Customer Survey completed per year

	A2.6.4 In consultation with relevant local and overseas stakeholders, identify prospective clients	• At least one new local client and one new overseas client identified and engaged • At least one new analytical work completed by SROS Technical Services for local or overseas client identified.

Strategy	Activity	Performance Measure
Corporate Objective 3: To investigate research pathways utilizing local resources for renewable energy generation, conduct environmental monitoring and impact assessments, and promote environmentally friendly practices		
S3.1: Expand/Improve current energy production processes to increase use of sustainable energy.	A3.1.1: In partnership with MNRE and key stakeholders, expand on the performance evaluation for biogas production in communities A3.1.2: Establish and operate a biogas plant at SROS as a RE demonstration and research system	• 1x technical report on biogas feedstock potential/performance • An operational demonstration and research biogas unit in place at SROS
S3.2: Assist the development of technologies and processes for renewable energy pathways.	A3.2.1: In partnership with EPC and relevant energy stakeholders, research into and trial alternative RE technologies A3.2.2: In partnership with relevant energy stakeholders, propose and implement research into a new RE technology/or improve performance of a current RE technology for Samoa	• 1x technical report on performance of developed RE technology and share with stakeholder partner(s) • 1 x approved research proposal on a new RE technology/ or improving performance of a current RE technology
S3.3: Support government environmental management initiatives and reporting requirements (e.g., to UNFCCC) through the collection of essential environmental monitoring data and information.	A3.3.1: Implement quality monitoring of Samoa's waterways and regularly update water quality data A3.3.2: Expand on water monitoring program by proposing at least 10 additional waterway sites for monitoring	• Annual water quality monitoring report • Addition of 10 waterway sites for ongoing monitoring

	A3.3.3: In partnership with relevant stakeholders, identify gaps in national environmental data (e.g., required for reporting back to international agencies) and assist in the collection and updating of relevant data	• 1 x technical report of newly collected environmental information/data
S3.4: Promote environmental protection through implementation of environmental impact assessments for new developments	A3.4.1: Implement environment impact assessments for new/potential developments, when/as requested by environment sector partners A.3.4.2: Develop MOU's/LOA's with relevant stakeholders e.g., PUMA	• 2 x completed EIA/PEAR/IEE reports • Have at least 1 signed MOU/LOA with a relevant stakeholder
S3.5: Support Samoa's transition into a plastic free environment by promoting research into plastic alternatives and utilizing waste management (waste-to-products) opportunities for by-products from banana trees and other agricultural waste.	A3.5.1: Develop a process for making paper and paper products from banana or other plant fibers. A3.5.2: Assist/collaborate with at least one local business with research into alternatives to plastic products	• 1x technical report on plant fiber paper/paper product making process • 1 x report on collaborative research with a local partner on waste-to-products/plastic alternatives.

Strategy	Activity	Performance Measure
Corporate Objective 4: To enhance the potential of Samoan natural products (not limited to traditional knowledge) through pharmaceutical, biomedical and cosmetic research		
S4.1 Develop an extensive and updated booklet of medicinal plants used in Samoan traditional medicines	A4.1.1 Together with MNRE DEC, engage with traditional healers selected from the Samoa Healers Association (SHA) to cover the geographical and population spread of Samoa	• Sign a Letter of Agreement with MNRE and SHA to ensure mutually agreed terms and access and benefit sharing of genetic resources and associated traditional knowledge is duly acknowledged
	A4.1.2 Collect and collate information from traditional healers	• Data collected from traditional healers and plant identification by MNRE botanist
	4.1.2 Prepare a booklet with newly/updated data/information of medicinal plants being used in traditional medicine	• Booklet/Manual on updated medicinal plants and their application in traditional medicine
S4.2 Develop a database to record the marine organisms/species of Samoa	A4.2.1 Work together with MAF and MNRE to collate survey data on marine organisms and occurrence in Samoan waters	• One compilation of data collected by the two Ministries
	A4.2.2 Work together with MAF and MNRE to produce a database for marine organisms of the Samoan archipelago	• Launch the database of marine organisms found in Samoan waters
S4.3 Support the effort to combat	A4.3.1 Collect at least 50 (medicinal)	• A library collection of at least 100

antimicrobial resistance to infectious diseases using Samoan genetic resources and associated traditional knowledge (where relevant) to guide research	plants and assess their antimicrobial activity against at least 5 clinical isolates A4.3.2 Collect at least 50 marine organisms and assess their antimicrobial activity against at least 5 clinical isolates A4.3.3 Collect at least 50 bacterial soil isolates and assess for potential antimicrobial gene clusters A4.3.4 Isolate at least 50 endophytes from medicinal plants and assess for potential antimicrobial gene clusters A4.3.5 Identify the mechanism of action of at least 2 antimicrobial extracts A4.3.6 Identify the bioactive principle of at least 2 antimicrobial extracts A4.3.7 Prepare a pipeline approach for pharmaceutical development for at least one candidate compound	extracts from 50 medicinal plants • A library collection of at least 100 extracts from 50 marine organisms • A library collection of at least 50 soil microbial isolates for DNA sequencing • A library collection of at least 50 endophyte gDNA for DNA sequencing • Chemical-genomic profile of at least 2 antimicrobial extracts • Isolated, purified and identified compound with antimicrobial activity • Proposed process for progressing findings into commercialization • At least 1 publication
S4.4 Assist the national drive to address non-communicable diseases by finding anti-diabetic extracts/natural products	A4.4.1 Collect at least 50 (medicinal) plants and assess their antimicrobial activity against at least 2 enzymatic pathways of NCD relevance	• A library collection of at least 100 extracts from 50 medicinal plants

	A4.4.2 Collect at least 50 marine organisms and assess their antimicrobial activity against at least 5 clinical isolates A4.4.3 Identify the mechanism of action of at least 2 anti-NCD extracts A4.4.4 Identify the bioactive principle of at least 2 anti-NCD extracts A4.4.5 Prepare a pipeline approach for pharmaceutical development for at least one candidate compound	• A library collection of at least 100 extracts from 50 marine organisms • Chemical-genomic profile of at least 2 anti-NCD extracts • Isolated, purified and identified compound with anti-NCD activity • Proposed process for progressing findings into commercialization • At least 1 publication
S4.5 Contribute to the global effort to find anti-cancer drugs to combat the rise in breast, lung, and prostate cancer in Samoa	A4.5.1 Collect at least 50 (medicinal) plants and assess their anti-cancer activity against at least 3 cancer cell lines A4.5.2 Collect at least 50 marine organisms and assess their anti-cancer activity against at least 3 cancer cell lines A4.5.3 Identify the mechanism of action of at least 2 antimicrobial extracts A4.5.4 Identify the bioactive principle of at least 2 antimicrobial extracts	• A library collection of at least 100 extracts from 50 medicinal plants • A library collection of at least 100 extracts from 50 marine organisms • Chemical-genomic profile of at least 2 antimicrobial extracts • Isolated, purified and identified compound with antimicrobial activity

	A4.5.5 Prepare a pipeline approach for drug /pharmaceutical development for at least one candidate compound	• Proposed process for progressing findings into commercialization • At least 1 publication

Strategy	Activity	Performance Measure
Corporate Objective 5: To improve agricultural production and postharvest techniques, and establish effective pest & disease control measures		
S5.1 Develop tissue culture technology for the mass propagation of at least ***2*** crop	A5.1.1 Upgrade/Upskill tissue culture staff through relevant training A5.1.2 Optimize method for TC mass propagation of taro A5.1.3 Optimize method for TC mass propagation of bananas	• Skilled staff to carry out TC mass propagation work • Methods/SOPs for mass propagation of taro (farmers have access to readily available planting material) • Methods/SOPs for mass propagation of bananas (farmers have access to readily available planting material)
S5.2 Develop postharvest technologies for at least 4 crops for local and/or overseas market	A5.2.1 Optimize postharvest technologies to facilitate export of breadfruit to New Zealand and Australia A5.2.2 Optimize postharvest technologies to facilitate export of citrus fruit to New Zealand A5.2.3 Optimize postharvest storage of turmeric to facilitate export to the United States of America A5.2.4 Determine the cause of postharvest	• Defined protocol for export of breadfruit to New Zealand/Australia • Defined protocol for export of citrus to New Zealand • Defined cool-store protocol for export of turmeric to the United States of America • ID of cause & solution to postharvest

	rot of taro in export consignments to New Zealand A5.2.5 Determine the optimal treatment regime for taro for export to New Zealand and Australia A5.2.6 Translate laboratory knowledge to grassroots through stakeholders and small-holder farmer workshop and trainings	rot of taro exported to New Zealand • Market access of Samoan fresh taro into the Australian market • Workshop material and report • At least one (1) scientific publication/technical report annually
S5.4 Develop sustainable agriculture production methods suitable to Samoa	A5.4.1 Develop crops with high yielding, early maturing, and high consumer acceptability A5.4.2 Develop strategies for the efficient management of pests and diseases A5.4.3 Develop cropping systems for food and value-added products, which are compatible with environment safeguard A5.4.4 Develop a strong role in technology transfer to agriculture and the food industry	• Identify 2 crops to be mass produced and distributed to farmers • Identify at least 5 economically important pests and diseases and propose control methodologies for all • Establish 2 cropping systems for display purposes • Dissemination of research findings through 2 seminars, 4 workshops

		• 4 publications on research findings

Strategy	Activity	Performance Measure
Corporate Objective 6: To engage in consultancy services to improve various development sectors and promote science as a subject/career		
S6.1 Provide technical consultancy services to assist the implementation of government projects developments	A6.1.1 At least one consultancy services agreement per year with the government ministries, private sectors, and key financial donors	• A technical report should submit to the Implementing Agencies • Each Consultancy services should generate 50% of the revenue to SROS as a cost recoveries • Pay consultancy fees to the staff as per HRM policy • Brief consultancy services report should be included in SROS' Annual report of each financial year
S6.2 Leader or Champion to promote Science in Schools, community, and local business owners	A6.2.1 Conduct two Science promotion activities per year for the primary and secondary schools A6.2.2 Support one science fair program for primary and secondary level	• Promote science as a career in schools by demonstrating science experiments • Offer prize for science fair competition for one primary school and one secondary school • Judge and mentor the school science fair programs • Promote SROS current and existing

		work activities to schools

Strategy	Activity	Performance Measure
Corporate Objective 7: To strengthen partnership with the private sector and stakeholders to support the commercialization of the Organisation's prototypes		
S7.1 Establish the commercialisation arm of SROS as a new division to facilitate plans and strategies to commercialise protoypes/products	A7.1.1 Submit business and commercial plan proposal to the Cabinet for approval to set up the new Commercial Division in SROS	• Cabinet to approve the establishment of the new Division called the Commercial Unit. • Cabinet to approve the commercialization plan, and secure funding support from the Government.
	A7.1.2 Prepare the commercialization roadmap plan, and secure funding to procure commercial production plant systems, and build the warehouse	• Build the warehouse facility to centralize all the production of the prototypes products.
	A7.1.3 Commence commercial production of at least 2 SROS products/prototypes	• Submit progress detail report to the Cabinet at the end of each financial year.

Strategy	Activity	Performance Measure
Corporate Objective 8: To ensure effective staff development in scientific research and support services		
S8.1 Upskill the technical staff through trainings, and work attachments available and offer by overseas stakeholder partners	A8.1.1 At least two technical staff to attend fully funded training available in overseas research centres or commercial related operations. A8.1.2 Two technical services staff to attend the certification course in New Zealand for Drug Analysis in Biological samples	• Staff must submit their travel or work attachment report to the HR for distribution to the MPE, MOF, and the Cabinet for the Management level, and to STSC for other staff • Two staff must receive certification from Institute Environmental Science and Research
S8.2 Conduct refresher trainings, Occupational, Health, and safety seminar or workshops for the Staff	A8.2.1 Corporate Services to lead the refresher training at the end of each financial year A8.2.2 Corporate Services to work with the MCIL review and inspect Occupational, Health, and safety policies and systems	• Staff should understand the current and existing HRM policies, financial procedures, asset management, and the Corporate Plan objectives • Implement the OSH policies and systems after the MCIL inspection • Install Emergency signage to all buildings • Install a Fire alarm system to all laboratories

Strategy	Activity	Performance Measure
Corporate Objective 9: To effectively manage SROS' financial, information technology and human resources		
S9.1 Ensure proper management of financial procedures and budgets of the organisation	A9.1.1 Prepare divisional budget, and performance measures	• Each divisional budget must submit to the Management at the end of December at every year • The annual budget should present to the Board of Directors for approval by December at every year
	A9.1.2 Update the asset register, and implement necessary repairs	• New facilities and assets should be register on the XERO system • Existing facilities should be maintain and carry out necessary repairs when approve by the Management
	A9.1.3 Prepare monthly, quarterly and annual reports	• Submit monthly report to the Management
	A9.1.4 Prepare the new Financial procedures guidelines manual	• Compile and submit Quarterly reports to the Ministry of Public Enterprises (MPE), Board of Directors Members, and the other Government agencies • SROS annual report should due before or on the 30th of October every year • Prepare the new SROS financial guidelines manual

S9.2 Recruit and hire personnel to achieve work targets and objectives	A9.2.1 Managers should provide performance feedback for his or her individual staff	• Staff performance appraisals must be reviewed by the management • Cash bonuses reward, and salary increments recommendation should approve by the board of directors
S9.3 Ensure SROS connects to the latest internet connection and improve online communications	A9.3.1 Manage the internet usage and making sure SROS information and data are protected	• Check and inspect the internet usage • Latest update of required software programs • Report any hackers • Keep all information and data confidential

6. Financial Statements

SCIENTIFIC RESEARCH ORGANISATION OF SAMOA						
STATEMENT OF INCOME AND EXPENDITURE						
FORECASTED BUDGET FOR 2020 TO 2024.						
	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
INCOME	**Audited (Actuals)**	**Forecast**	**Forecast**	**Forecast**	**Forecast**	**Forecast**
Grants from Government of Samoa	3,332,837	3,499,479	3,604,463	3,676,552	3,750,084	3,825,085
Technical Services Income	240,369	252,387	259,959	265,158	270,461	275,871
Donor Project Income	757,315	795,181	819,036	835,417	795,800	795,800
Other Income	232,512	244,138	251,462	256,491	261,621	274,702
Total Income	**$ 4,563,033**	**$ 4,791,185**	**$ 4,934,920**	**$ 5,033,618**	**$ 5,077,966**	**$ 5,171,458**
EXPENDITURES						
Audit fees-current	23,460	22,474	22,474	22,474	22,474	22,474
Depreciation	486,465	510,788	510,788	521,004	521,004	521,004
Personnel costs	2,062,409	2,165,529	2,230,495	2,230,495	2,275,105	2,275,105
occupancy costs	229,396	240,866	248,092	253,054	258,115	263,277
Administrative costs	738,250	775,163	798,417	814,386	830,673	847,287
Directors fees & board expenses	108,792	108,792	108,792	108,792	108,792	108,792
Donor Project costs	757,315	795,181	795,181	835,417	795,800	795,800
Other Costs	418,649	318,056	318,056	300,056	300,056	297,000
Total Expenditures	**$ 4,824,736**	**$ 4,936,849**	**$ 5,032,295**	**$ 5,085,678**	**$ 5,112,019**	**$ 5,130,739**
Net Surplus/Loss	**-$ 261,703**	**-$ 145,664**	**-$ 97,375**	**-$ 52,060**	**-$ 34,053**	**$ 40,719**

SCIENTIFIC RESEARCH ORGANISATION OF SAMOA						
STATEMENT OF FINANCIAL POSITION						
FORECASTED BUDGET FOR 2020 TO 2024						
	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
ACCUMULATED FUNDS	**Audited (Actuals)**	**Forecast**	**Forecast**	**Forecast**	**Forecast**	**Forecast**
Opening balance	3,684,314	3,422,609	3,276,945	3,179,570	3,127,150	3,093,097
Add: Surplus/Loss	- 261,705	- 145,664	- 97,375	- 52,060	- 34,053	40,719
Closing Balance	**$ 3,422,609**	**$ 3,276,945**	**$ 3,179,570**	**$ 3,127,510**	**$ 3,093,097**	**$ 3,133,816**
Represented by:						
Current Assets						
Cash and cash equivalent	1,750,807	1,770,852	1,790,925	1,795,000	1,800,000	1,820,223
Trade & Other receiveables	112,532	130,532	132,000	133,000	134,800	135,400
Prepayments	54,959	60,000	62,350	63,500	64,230	65,280
Stock on Hand	135,288	145,288	147,000	148,000	149,300	151,285
Total Current Assets	**$ 2,053,586**	**$ 2,106,672**	**$ 2,132,275**	**$ 2,139,500**	**$ 2,148,330**	**$ 2,172,188**
Current Liabiliies						
Trade Payables	73,242	70,242	70,125	70,000	69,123	67,852
Accruals	70,291	70,200	69,520	67,200	66,230	65,300
Allowance for staff benefits	100,124	100,300	111,200	112,000	110,563	99,562
Deferred Income	1,171,511	1,271,511	1,337,000	1,437,000	1,492,000	1,585,236
Total Current liabilities	**$ 1,415,168**	**$ 1,512,253**	**$ 1,587,845**	**$ 1,686,200**	**$ 1,737,916**	**$ 1,817,950**
Working Capital	**$ 638,418**	**$ 594,419**	**$ 544,430**	**$ 453,300**	**$ 410,414**	**$ 354,238**
Non Current Assets						
Property, plant and equipment	2,784,191	2,682,526	2,635,140	2,674,210	2,682,683	2,779,578
Net Assets	**$ 3,422,609**	**$ 3,276,945**	**$ 3,179,570**	**$ 3,127,510**	**$ 3,093,097**	**$ 3,133,816**

SCIENTIFIC RESEARCH ORGANISATION OF SAMOA						
CASH FLOW STATEMENT						
FORECASTED BUDGET FOR 2020 TO 2024						
	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
Cash flow from /to operating activities	Audited (Actuals)	Forecast	Forecast	Forecast	Forecast	Forecast
Cash received from Government of Samoa (GRANT)	3,332,837	3,499,479.00	3,604,463	3,676,552	3,750,084	3,825,085
Cash received from donor projects	241,317	300,000.00	325,000	298,156	250,000	242,365
Cash received from technical services	240,369	252,387.00	259,959	265,158	270,461	275,871
Other incomes	134,458	584,621.00	455,206	412,000	403,746	400,512
Cash paid for epxenses	- 4,079,189	- 4,056,212.00	- 4,044,322	- 4,056,232	- 4,066,513	- 4,088,882
Net cash flow by operating activities	**$ 100,670**	**$ 580,275**	**$ 600,306**	**$ 595,634**	**$ 607,778**	**$ 654,951**
Cash flows fron/to investing activities						
Purchase of property, plant and equipment	- 547,675	- 560,230	-580233	- 586,259	- 587,555	- 590,257
Net cash used by investing activities	**-$ 547,675**	**-$ 560,230**	**-$ 580,233**	**-$ 586,259**	**-$ 587,555**	**-$ 590,257**
Net increase/(decrease) in cash	**-$ 447,005**	**$ 20,045**	**$ 20,073**	**$ 9,375**	**$ 20,223**	**$ 64,694**
Cash and cash equivalent at the beginning	2,197,812	1,750,807	1,770,852	1,790,625	1,800,000	1,820,223
Cash and cash equivalent at the end	**$ 1,750,807**	**$ 1,770,852**	**$ 1,790,925**	**$ 1,800,000**	**$ 1,820,223**	**$ 1,884,917**

Forecast Budget Financial Notes.

- The government grant will increase in every fiscal year at the rate between 3% and 5%.
- Technical Services revenue expected to grow by 2% to 5% depending on the number of samples receive and test by the division.
- Donor funded income will increase by 5% to 10%.
- All expenditures costs are expected to increase by 5% to 7%. The forecast budget was based on the new vacancies, new work activities and tasks from the government.

- Most of the Capital costs will provide by the Government and Donor funded assistance especially the purchasing of scientific equipment, and new laboratory building.
- SROS' will allocate its cash reserve to purchase scientific and research machines at the cost between 50,000 and 150,000.
- In addition, the revenue collected from the Technical services and sales of product will use for minor renovations, purchasing of consumables, and chemicals.

7. Future Additions

7.1 Establishment of the Commercialisation Unit

Since its establishment in 2006, SROS has continued to struggle to engage the private sector to commercialise its products and prototypes. To this end, the Organisation has taken the initiative to discuss the establishment of a Commercialisation Division within the SROS, to carry out the commercialisation and sales of SROS products, under the Company's Act. This has been approved by Cabinet and is currently being implemented.

7.2 Establishment of the Agriculture Research Division

With the assistance of the Ministry of Agriculture and Fisheries (SAMOA), SROS is setting up a new division devoted to all research issues related to agriculture crop production. This division will support farmers that face the challenge of producing sufficient crops to meet growing consumer demand while maintaining the quality and quantity of resources for future generations. SROS is committed to developing research-based technologies to help farmers increase productivity and production efficiency while practicing sustainable agriculture.

7.3 Establishment of the Food Innovation centre

The establishment of a food processing facility together aims to support the growth of the food industry in Samoa. This allows entrepreneurs to develop new products and ideas, support growth, and provide mentoring for break-through product development. Companies can do research and development trials, pilot scale and commercial runs of new products for domestic and export markets. The products from the food innovation centre will be fresher, more cost effective to produce and have a longer shelf life.

7.4 Expansion of Technical Services to Drug Analysis on Biological Samples

The expansion of the Technical Services scope of testing is towards the drug analysis on biological samples including but not limited to blood and urine. This will allow SROS Narcotic Testing Laboratory to have the capacity and qualify as well as the analysts to be competent and certified to analyse drugs on biological samples. Currently SROS drug analysis is limited or can only qualify and certify to do analysis of Narcotics (Illicit Drugs) and controlled substances with their precursors in their physical forms.

SROS is committed to assisting the public and private sectors by providing certified, reliable and quality assured testing services. The expansion of SROS drugs testing to cover biological samples will reinforce and boost its efforts to facilitating the Law and Justice Sector in combating narcotics. The expansion of scope of drug analysis will assist the drug testing in workplace to ensure the safeguard of employees and members of the public against injury and/or death under the influenced of drugs during execution of work. It will also assist Law and Justice Sector by providing toxicological evidences for criminal offences and purposes of the Drugs and Alcohol court.

7.5 Battery

In collaboration with the Electrical Power Corporation (WPC), SROS is in the process of designing and building a battery prototype for solar energy storage, based on a design developed by Thomas Edison and patented in 1906. It is a rare technology and SROS believes it has many advantages over the more common batteries being manufactured in the market today. Electrical power generation from solar in Samoa is promising, however, solar as an energy source is erratic in nature and needs adequate storage to stabilise the electric grid. This research provides a locally made sustainable battery option that is transportable, with high efficiency and robustness and has the ability to withstand several thousand charging and discharging cycles.

8. Alignment with Government Policies

The SROS was specifically set up with a key goal to improve the national economy through value adding to local resources and services. The results of research activities are expected to lead to the development of prototype products and services for uptake by industry to supply the local and overseas markets. SROS also works closely with other government sectors and the private sector to resolve sector and industry specific challenges requiring scientific research.

(i) Samoa 2040
   a. Transform the Samoan economy
(ii) Strategic Development Goals (SDGs)
   a. No Poverty
   b. Zero Hunger
   c. Good Health & Well Being
   d. Clean Water & Sanitation
   e. Affordable & Clean Energy
(iii) Strategic Development for Samoa (SDS)
   a. Agriculture & Productivity Increased
   b. Exports Increased
   c. A healthy Samoa and well-being promoted
   d. Access to clean water and sanitation sustained
   e. Quality energy supply
(iv) Agriculture Sector Plan
   a. Strategic Policy Objective 2: Ensuring an increased stable supply and consumption of domestically produced nutritious food products for both rural and urban communities
   b. Strategic Policy Objective 3: Enhancing private sector capacity in improving production, productivity, product quality, value adding and marketing
(v) Environment Sector Plan
   a. Sustainable management of water resources improved
   b. Sustainable management and development of lands improved
   c. Sound management of chemicals and hazardous waste improved
   d. Low carbon developments through energy efficiency and renewable energy improved
   e. Sustainable development planning and environmental monitoring improved
(vi) Water Sector Plan
   a. Prioritized fresh water resources are monitored
   b. Water safety planning
   c. Drinking water quality regulation monitoring
(vii) Energy Sector Plan
   a. Renewable energy increased

b. Electricity services improved

(viii) Health Sector Plan

a. Objective 2: Improving access to and strengthening quality health care delivery in Samoa (controlling and managing infectious and non-communicable diseases)