

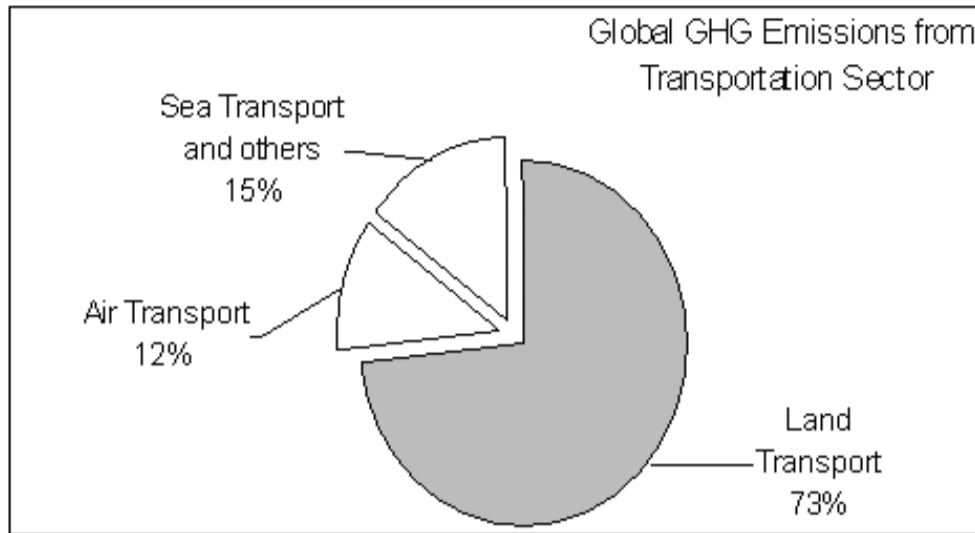


# OUR ENVIRONMENT OUR HERITAGE

## CLIMATE CHANGE MITIGATION THROUGH ENERGY EFFICIENCY AND RENEWABLE ENERGY

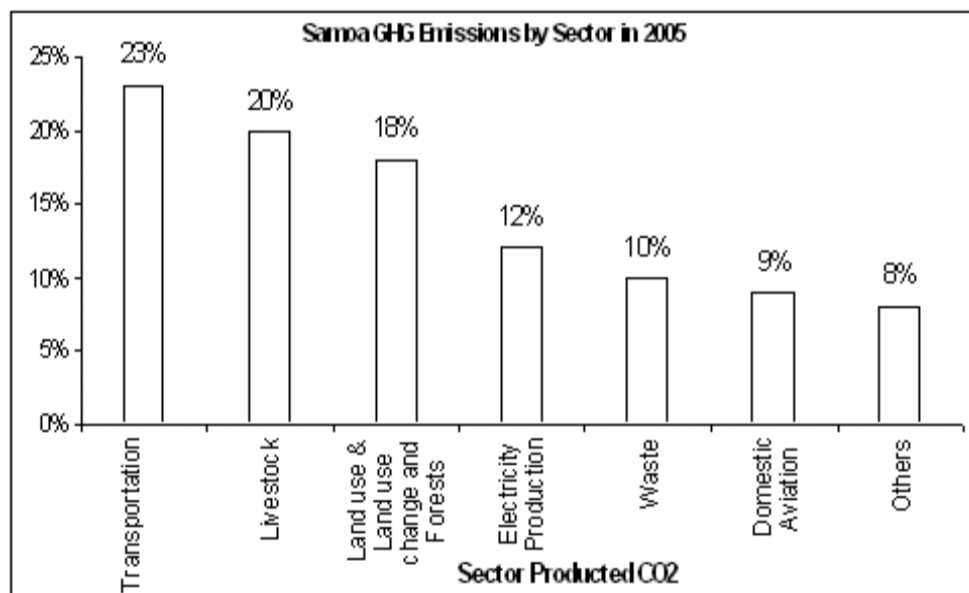
### Global GHG Emissions from Transportation Sector 2000

In Transportation Sector 73% of GHG emissions came from Land Transport, 12% from Air Transport and 15% from the Sea Transport and other. In the overall Land Transport produced the largest GHG emissions in the world from Transportation Sector.

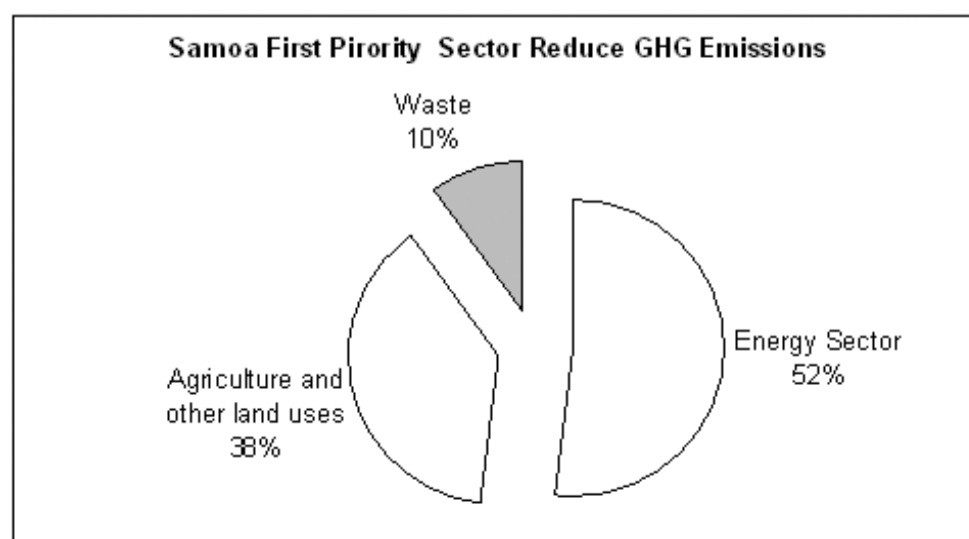


### National GHG emissions:

Samoa like all parties to the United Nations Framework Convention on Climate Change (UNFCCC) is acutely concerned about the impacts of climate change to its people and their livelihoods. As a small island developing state and least developed country Samoa contributed very little to global warming and yet is among the most vulnerable to its impacts and consequences.



According to the Samoa's First National GHG Inventory the total national GHG emission was 200,000 tons in 1994 while the preliminary findings of the Second National GHG Inventory estimated emissions at 370,000 tons in 2005 - a rise of nearly 86%. The 2005 emissions were made up of 23% from transportation 20% from livestock; 18% from land use and land use change and forests; 12% from electricity production; 10% from waste; 9% from domestic aviation; and 7% from other sources.



The priority sectors therefore for GHG abatement actions are energy with 52% of total emissions; agriculture and other land uses with 38% and waste management with 10%.

Samoa is heavily dependent on imported petroleum products for its energy needs. Fuel imports in 2004 were 27 million litres of petrol (ST48 million) where most was used in land transport; 35 million litres of diesel (ST58 million) with nearly half used for electricity generation; 16 million litres of kerosene (ST25 million) with most used for aviation purposes; and 1.3 million kg of liquefied petrol gas with half used by commercial customers. The national annual fuel bill is over ST130 million and growing with the global price of oil now over USD90 a barrel.

### National GHG Abatement Strategy (NGHGAS):

The overall objective of the NGH GAS is to mitigate the impact of climate change through GHG abatement; supporting global action to reduce GHG emissions but also strengthening the national economy by the efficient operation of the relevant sectors producing GHG. Action in the energy sector, particularly land transportation and electricity generation would achieve the dual global and national benefits while trade offs in the agriculture, land use and land use change and forests may provide cross-cutting national benefits in key sectors such as tourism and manufacturing. As seen from the matrix below the strategy deals with a range of relevant sectors and issues.

It is considered that the importation of petroleum products is now considered too expensive for Samoa to rely on in the long-term as it continues to drain the nation's foreign reserves and fossil fuels contribute significantly to GHG emissions. The best way to mitigate global climate changes attributed to the land transport sector is to strengthen efficiency in the motorised land transport sector, encourage the use of non-motorised transport and promote the development of bio-fuels as an alternate for fossil fuel use. These strategies are the appropriate options for Samoa to take in order to reduce the cost and dependency on imported fossil fuel products.

Energy efficiency is also a main consideration in the electricity sector focussing on both the demand and supply management. While the development of renewable energy is also being promoted it is really in energy efficiency, according to the International Energy Agency, where the main benefits in GHG reduction will accrue during the next 30-50 years.

One of the key issues to be considered under electricity demand management is peak demand. In 2000 the average demand was recorded at about 87,000 MWH which increased to about 108,000 MWH in 2006. Since electricity cannot be effectively stored, electrical networks must instantaneously balance generation and load, i.e., supply must always equal demand. Therefore there is a need to build for the peak because sufficient generation capacity must meet maximum instantaneous demand whenever it happens. Meeting varying demands requires a mix of generation capacity including base-load and peak-load generation. A base load generation unit is one that provides a steady flow of power regardless of total power demand by the grid. In contrast a peak-load unit runs only when there is a high demand. In Upolu for instance peak demand occurs during the day when people are at work and in the evening when people returned home. These highs and lows result in significant unused power leading to an oversupply of electricity.

#### For more information contact :

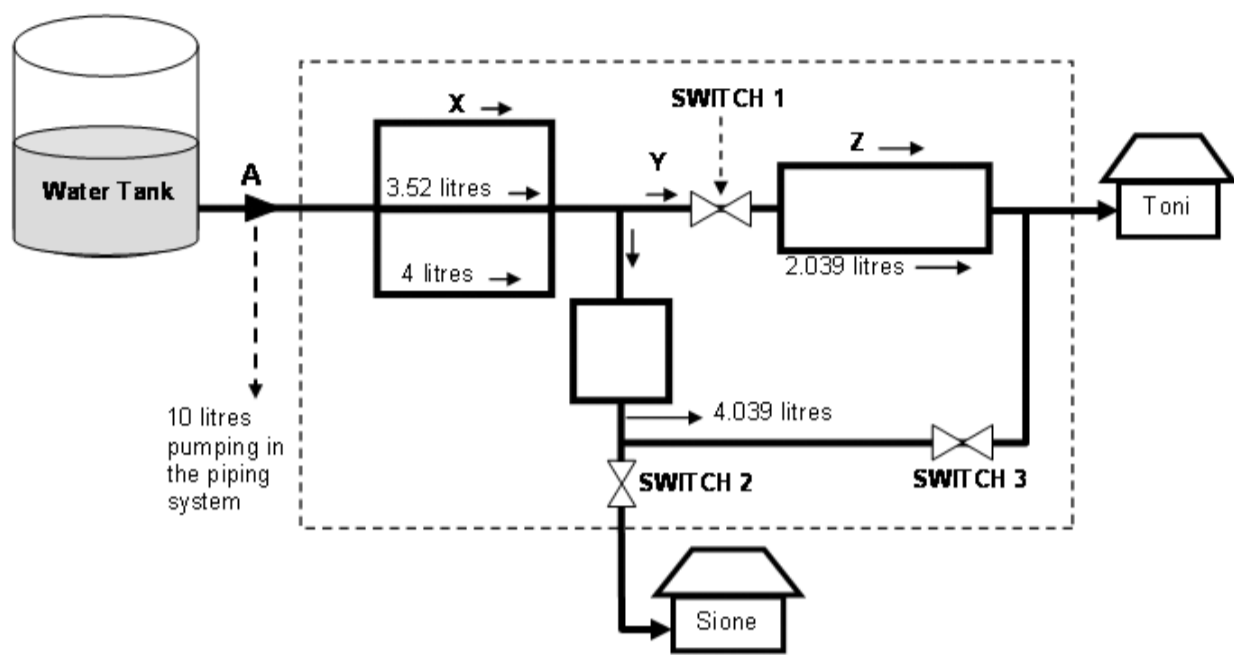
Mataia Uaine L Silailai  
 Assistant CEO - Renewable Energy Division  
 MNRE  
 CEO's Office, Level 3, Development Bank of Samoa Building.  
 Email: uaine.silailai@mnre.gov.ws



# OUR ENVIRONMENT OUR HERITAGE

## CHILDREN'S CORNER

Children aged 9-15 are invited to answer the following corner. The name of 3 students with top scores at the end of every month will be posted under the "Children's Corner" for special prizes. "2008 Young Environmentalist Star Awards" will be given to 10 students with top total scores at the end of the year.



### Narrative descriptive of the photograph

Sione and Toni build a water tank to supply water for their everyday needs. The 10 litres of water pumping from the tank to the piping system went through Toni and Sione house.

### ANSWER THE FOLLOWING QUESTIONS

(1) 10 litres of water at pipe A pumping in the piping system if Switch 1, 2 and 3 fully opened. What is the value of X? Circle the right answer.

- a. 2.48 litres
- b. 1.48 litres
- c. 3.52 litres
- d. 4 litres

(2) What is the value of Y if Switch 1, 2 and 3 fully opened. Circle the right answer.

- a. 6.961 litres
- b. 5.961 litres
- c. 4.039 litres
- d. 7.52 litres

(3) What is the value of Z if Switch 1, 2 and 3 fully opened. Circle the right answer.

- a. 6.078 litres
- b. 7.52 litres
- c. 4.039 litres
- d. 5 litres

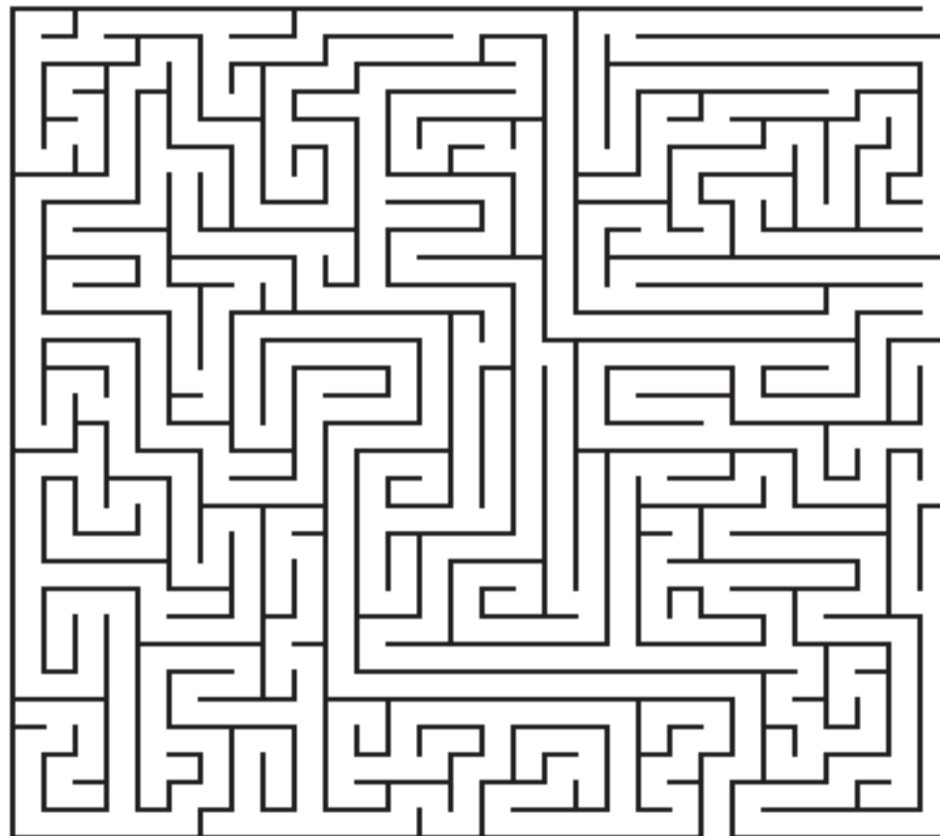
(4) If switch 1 and 2 fully closed and switch 3 fully opened. Which of the following is true.

- a. Toni and Sione get no water
- b. Toni and Sione still get water
- c. Toni still get water and Sione get no water
- d. Sione still get water and Toni get no water

(5) If switch 3 is fully closed and other two fully opened. The volume of water Toni get is:

ANS: \_\_\_\_\_

### MAZE



### ACKNOWLEDGEMENTS

We wish to acknowledge and thank the following companies for sponsoring our children's corner prizes

- STRICKLAND BROS
- DIGICEL  The Bigger. Better Network.
- McDONALD'S RESTAURANT
- BUSINESS SYSTEM

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