MEDITERRANEAN ACTION PLAN

Third Meeting of the Task Team
on Implications of Climatic Changes
on the Island of Malta

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IMPLICATIONS OF EXPECTED CLIMATIC CHANGES
ON THE ISLAND OF MALTA

TRANSPORT

by

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In their report 'Climate Change - Meeting the Challenge' prepared by a Commonwealth Group of Experts, it is stated that:

"transport is likely to be affected both by the direct impact of climate events (flooding, fog, ice or snow) and by demands for enhanced economy in the use of fossil fuels which could augment pressures for more efficient systems and for public transport at the expense of energy-demanding, low-occupancy private vehicles."

This conclusion is also reached by the Intergovernmental Panel on Climate Change Impact Assessment Report which states that "an increase in temperature can be expected to reduce sea and river ice and snowfall, affecting shipping, air travel, highway and rail transport" and "Some elements of transport are likely to be significantly affected by public policies or consumer actions designed to retain emissions of GHG".

At some time, it is relevant to point out that according to the IPCC Report, "the studies concerning the likely implications of climate change for transport are quite restricted in geographic scope, being limited largely to three countries: Canada, the United Kingdom and the United States. It is uncertain how these studies in three high latitude Northern Hemisphere nations are representative of likely transport impacts on the globe as a whole".

The assumptions reached concerning the impacts of climate change on transport in the Maltese Islands may therefore be limited.

**Transport Situation in Malta**

As an island country in the Mediterranean, Malta depends entirely on sea and air links with the outside world and in particular, with its import and export trade which is carried out with the member countries of the European Community and the remainder with more use if being made of the TIR transport and together with the shipping lines serving Malta, these two transport facilities offer the Maltese businessman the measures to import and export of goods for human use and consumption.

The maritime and air services also provide another important sector of the Maltese economy with foreign exchange earnings generated from the number of tourists visiting Malta all-year round.

In the light of the concern over global warming, the Government of Malta is anxious to restrain emissions of Greenhouse gases, including in reducing emissions from transport. Malta does not manufacture cars and imports all kinds of motor vehicles from foreign manufacturers. Therefore, Malta indirectly benefits from advances in technology. Car traffic is greatly on the increase as a result of the substantial increase in the number of cars (Table 1).

At the same time, Malta has taken a step forward in order to reduce the levels of potential greenhouse gases. Lead-free petrol for motor vehicles has been introduced and is encouraging owners of new motor vehicles to make sure that their petrol driven cars are equipped with three-way catalytic converter which removes oxides of nitrogen (NOx), hydrocarbons and carbon monoxide (Co) from the exhaust gases.

These steps are also in line with Malta's declared position to join the European Community where three-way catalytic converters have become compulsory for all cars in the early 1990.

Again, no studies exist on the likely impacts of Climate Change on roads in countries similar to Malta, where local transport depends entirely on road communication. In view of the small surface area of Malta, there are no railways, while commuting by air is limited only by a helicopter service used between the two islands of Malta and Gozo during the spring summer scans. Therefore, this situation might be the reason for the high ratio of motor vehicles on the road in Malta.
The total length of public roads in Malta is 1553 kilometres (1989) with 1433 kilometres (1989) paved or asphalted. A cast programme of road improvement is under way (see Table 2).

The importance of road communication in Malta cannot but be highly emphasised. Climate change resulting in an increase of rainfall, particularly during the summer which according to the study carried out on the Malta data there has been over the last 125 years an increase of 52%, will have a negative impact on the condition and use of roads in the Maltese Islands. Less rainfall would result in fewer potholes and reduced water-flooding of strategic arteries of traffic.

Road traffic would only suffer in the case of flooding in the main traffic arteries as a result of severe storms which are highly probable in case of an increase in autumn precipitation as mentioned in the report on Climate Trends in Malta.

As already stated above, the maritime and air services are an important component of the socio-economic development of the Maltese Islands.

The IPCC Impact Assessment Report states that “there is little data or analysis concerning the potential impacts of climate change and associated sea-level rise on ocean shipping and on sea ports”.

Being an island country, Malta utilises its maritime potential as much as it is technically and financially possible. Its Sea Malta Ltd. vessels navigate the Mediterranean and adjoining seas, while its sea ports offer safe-haven to numerous vessels, transhipment facilities, yachting centres and most importantly dockyard facilities, which is the major employer in Malta.

Ferry services are used all the year round between the two major islands of Malta and Gozo. These services are used for transport of commuters (workers and tourists) and for consumer goods.

Without any doubt, climate change could have a negative impact on the maritime sector, in particular if there is an increase in the storms and winds which have in the past cancelled the ferry services between Malta and Gozo. The battering by sea waves of the Maltese seashore as a result of an increase in the gusts of winds have damaged the breakwaters and wharfs.

However, according to figure 16, the number of days with gusts greater than 34 knots shows a downward feud from 54 per year to about 35 per year. This statistical data, together with the new technology in ship-building gives a favourable outlook in sea navigation.

The situation in regard to air transport is more or less similar to that of the maritime sector. Climate change might in fact give a boost to the air service sector.

Air Malta, the Malta air carrier, is an important communication link with major capitals of Europe. Air Malta’s operations has schedule services to 22 major airports and regular charter flights from several more. In view of its small fleet, Air Malta’s aircraft has one of the highest utilisation in Europe.

In addition, a helicopter air-link service is maintained between Malta and Gozo for six months every year. Already, this service introduced in 1990 increased its passenger load by 38% in 1991, a trend which could further improve with a positive climate change.

Technological advances have made it possible for aircraft to fly in temperatures as low as -65 C and in winds as great as 400 knots. IPCC Impact Assessment Report. Furthermore, technological improvements are minimising fog and low cloud visibility problems.

From the study of the climate trends at Malta, the outlook for air transport is good and climate change will have a positive influence on this service sector. The study shows ‘a trend towards a decrease in the amount of cloud cover’ as a result of our increase in anticyclonic conditions. At the same time, there will be an increase in the hours of sunshine.
Another positive element resulting from the study is the number of days with gusts greater than 34 knots, 54 per year to about 35 per year.

And yet, another interesting point is that the number of days with fog at the Airport in Malta are on the decrease, from 11 to about 8 per year. This would lessen visibility problems which hinder air travel.

Aircraft performance, including helicopter operations may on the other hand face certain problems, particularly during take off if conditions of high temperature and low barometric pressure prevail. According to the study carried out on the Malta data shows that over the last 70 years or so, the maximum temperature has increased by 1.0 deg. C or 4.7%, and over the last 40 to 45 years, the highest temperature recorded each year has increased by 2.8%. In contrast, atmospheric pressure is showing an upward trend. In fact, over the last 70 years or so, atmospheric pressure in Malta has increased by 11.5 hla or 10%, which may help somewhat aircraft performance especially in take off.

Perhaps, further consideration needs to be given to the process of desertification "which is already in action at our latitude". The possibility therefore exists for an increase in lazy conditions blue and suspended particles in the air.