

WHAT IS A SUSTAINABLE POPULATION FOR JERSEY?

WATER SUPPLY ISSUES

Water supply is a limiting factor in deciding what Jersey's population should be but has received little attention in public consultation or the media, probably because it is 20 years since the last appreciable drought in the Island in 1989. People may well have forgotten the real inconvenience and economic consequences of the serious shortage of supply in 1976. Indeed, some of those planning for our future may well not have been born in 1976!

While the draft Strategic Plan makes absolutely no mention of water supply as an issue in setting a sustainable population, the Island Plan Review Green Paper published for consultation in 2008 contained a section (4.6) on Jersey's water cycle and supply. Paragraph 4.6.5 states that "*Jersey Water is currently carrying out a 25 year Water Resource Assessment, which will be completed later this year*". I am not aware that this assessment has reached the public domain but I hope that it is being considered by those formulating the Strategic Plan as well as the White Paper on the Island Plan Review.

Looking at the figures published on Jersey Water's website, www.jerseywater.je, we see that the company supplies some 90% of the island's population. A population of 90,000 uses an average of 19 Megalitres per day (1 Megalitre, Ml, is 1,000,000 litres). This rises to 23Ml or 24Ml per day in the summer months. Jersey Water's reservoirs can hold 110 days supply (at an average of winter and summer usage). An increase in population from 90,000 to 100,000 would lead to an average consumption of 21Ml per day, with reservoir storage in a dry spell lasting between 127 days (at winter usage levels) and 71 days (at summer usage levels). In the summer there is also considerable loss of water from reservoirs by evaporation.

I am now retired but in 1990, when I was employed in Jersey Meteorological Department, I made a study of drought in Jersey. (The Department holds a copy of my report on this study). In particular, I looked at past droughts, going back to 1894, their statistics, and how often they might be expected to recur on average. The statistics can be used to give a probability of occurrence of drought of a particular severity in any one year. For example, there is a probability of 3% or 4% of a drought like that of 1989 being experienced in any one year. A drought of the magnitude of 1976 would only have a probability of occurrence of between 2% and 3%. To put it another way, a 1989 drought could be expected to occur, on average, every 28 years, and a 1976 drought every 38 years. Worse droughts happened in

1949 and 1921, and such events could be expected, on average, every 60 and 190 years respectively.

Of course, drought is not simply a climatological phenomenon, but makes its impact in the deficiency of supply with respect to demand. A complicating factor is that we should not look at statistics for individual years on their own. The drought of 1976 had a severe impact on the island because there were two dry years in a row, so that reservoirs had not been refilled after the previous summer's depletion in 1975. Jersey has a relatively small contribution to public supply from groundwater. While 10% of the current population obtain their supply from private wells and boreholes, these sources of supply may fail after a prolonged dry spell, as many did in 1976, necessitating the expensive carting of water.

Jersey Water's desalination plant, when operating at full capacity, can produce 6MI per day. This represents about a third of the Island's daily needs at winter usage levels, and a quarter at summer levels. This would only go a small way to meet demand and is similar to that which was available in 1976, when severe restrictions had to be placed on water use.

The Island Plan Review acknowledges that climate change may bring changes in the pattern of rainfall, with current projections favouring wetter winters and drier summers, and less reliability in all seasons. The recently published document entitled "Turning Point" from the Environment Department provides plenty of information on future possibilities and section 4.19 specifically addresses the issue of water supply in Jersey. Climate change may turn out to invalidate statistical inferences from climatological data but past events cannot be ignored as we plan for the future. Without an increase in storage capacity (unlikely to be popular) or a huge increase in desalination capacity (expensive), the Island's population should be rigorously capped at a level that would limit the personal and economic hardship caused by a series of dry months or years.

I hope that Jersey Water's assessment will be made public and full account will be taken of it in both the strategic and physical plans for the island. I personally believe that, from the point of view of water supply and the risk of drought, to allow the population to increase beyond 100,000 would be reckless. For many other reasons to do with the environment and quality of life I think that a lower figure is more desirable for the long term.

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