



Potential of Rainwater Harvesting in Ireland

According to research commissioned by the National Rural Water Monitoring Committee (NRWMC) (2008), water demand resulting from urban development is typically met by importing large volumes of water across large distances – and at considerable cost – from neighbouring catchments. This water is then treated to drinking water quality standards. Less than 1% of urban water consumption is used for drinking. However, all mains water supply is treated to potable quality [O’Sullivan, 2002]. The overall result of this is that water supply and treatment is costing the Irish taxpayer a considerable amount of money which, in these tough economic times, could be better used elsewhere.

At the same time, considerable amounts of rainwater fall on our roofs every day but this water is not put to any productive use. According to NRWMC (2008), a typical Irish house with a roof area of 75m² could potentially collect 51m³ of rainwater annually in an area where average rainfall was 1,000 mm. This water could be used for a variety of purposes including flushing toilets, cleaning, laundry and garden irrigation.

A case study within the NRWMC report indicated that in a 3-person household (two adults and one child) would use approximately 11m³ of water annually for flushing the toilet alone. If one was to apply this figure nationally where, according to the CSO data, the typical household size in Ireland is 2.81 and the number of households in the country is approximately 1.46 million, an astonishing 16.06 million m³ of water could be saved – just by using rainwater to flush toilets. This alone would represent an annual saving of €3.2 million to the exchequer because, according to the Dept of Environment, Heritage and Local Government, it costs on average €2.07 per m³ to treat water in Ireland (€1.06/m³ for water supplied and €1.01/m³ for wastewater discharged). If all of the rainwater collected in a typical year from a typical Irish

household was productively used, then a potential saving of 74.5 million m³ of water could be achieved, saving the exchequer up to €154 million per year in water treatment costs.

Furthermore, the results of the NRWMC study also indicate that the rainwater collected during the case study complied with Bathing Water Regulations, meaning that it could be used for a wide variety of purposes within the home, thus offering even further scope to substitute expensive public water supply with rainwater.

For businesses, the costs of water look likely to continue on an upward trend. Indeed, a recent report from Forfas (September, 2008) indicated that average water costs in Ireland were €1.67 per m³ whilst in Europe the average is €3.24/m³. Given the current economic situation, it is likely that these costs will increase towards the European average. Therefore, it makes sense for businesses to harvest their rainwater, because at present, they are not only getting charged for water supply, they are also getting charged for water they discharge including significant volumes of rainwater which they are currently getting no use for. Money is literally being thrown down the drain!

With regard to farms, the potential of rainwater harvesting to act as a contingency supply is significant. The NRWMC report also commissioned a case study of a 250 acre beef farm in Co. Meath, where over a 16 month monitoring period there was a 42.6% saving in mains water to supply cattle troughs which equated to 215m³ of mains water being substituted by rainwater. Given the results, from this case study if rainwater harvesting was widely adopted throughout the 130,000 farms in Ireland the scope for further water savings would be significant. In addition, having a rainwater harvesting system offers farmers an alternative source of water supply to act as a vital contingency source of water supply when the mains water supply is inadequate to meet farming needs due to lack of pressure or due to a breakdown in supply.

Overall, one can conclude that rainwater harvesting has the potential to save significant amounts of money currently devoted to water treatment. Over the longer term as water treatment costs rise and likelihood of widespread adoption of water metering (including domestic users) increases, it would be prudent to take action now and install a rainwater harvesting system so that you can begin to realise savings immediately whilst doing your bit for the environment and the economy in general.