

Survey on Environmental Policy and Individual Behaviour Change (EPIC)

JAPAN

Summary of Selected Survey Results

Environmental pressures from households are significant, and without continued policy efforts their impacts are likely to intensify over the coming years. Developing growth strategies that promote greener lifestyles and consumption patterns is receiving increasing attention. Recent OECD work offers new insights on how best to meet this challenge by helping governments to better understand households' behaviour towards the environment and how policies affect their decisions in the real world.

This work is based on large-scale periodic surveys on Environmental Policy and Individual Behaviour Change (EPIC). The first two rounds involved **more than 10 000 households** across a number of countries.

Japan took part in the second survey which was implemented in 2011 and covered eleven countries representing different OECD regions. The other countries involved were Australia, Canada, Chile, France, Israel, Korea, the Netherlands, Spain, Sweden and Switzerland. An overview of the survey responses is now available in OECD (2013).¹

The questionnaire used in the EPIC surveys is developed by the OECD with inputs from an Advisory Committee composed of experts. The surveys are implemented via the Internet using online household panels with a total of more than 1 000 households in each participating country. The second round of the EPIC Survey was implemented early 2011, before the Great East Japan Earthquake. It covered over 12 000 households of which 1 043 in Japan. In each country, efforts were made to ensure representativity of the sample across different age groups, gender, regions and income.

The survey included a question on households' perceived importance of environmental problems relative to other global issues (e.g. social, economic, security-related). For Japanese respondents, the three most prioritised issues were "economic concerns" followed by "environmental concerns" and "international tensions". Japan is one of the few countries surveyed, together with Israel and Korea, where older respondents expressed relatively higher concern for environmental issues than younger respondents. As in most countries surveyed, Japanese female respondents were significantly more likely than men to rank environmental concerns among the three most important global issues. Japan is the country where this difference is the most marked.

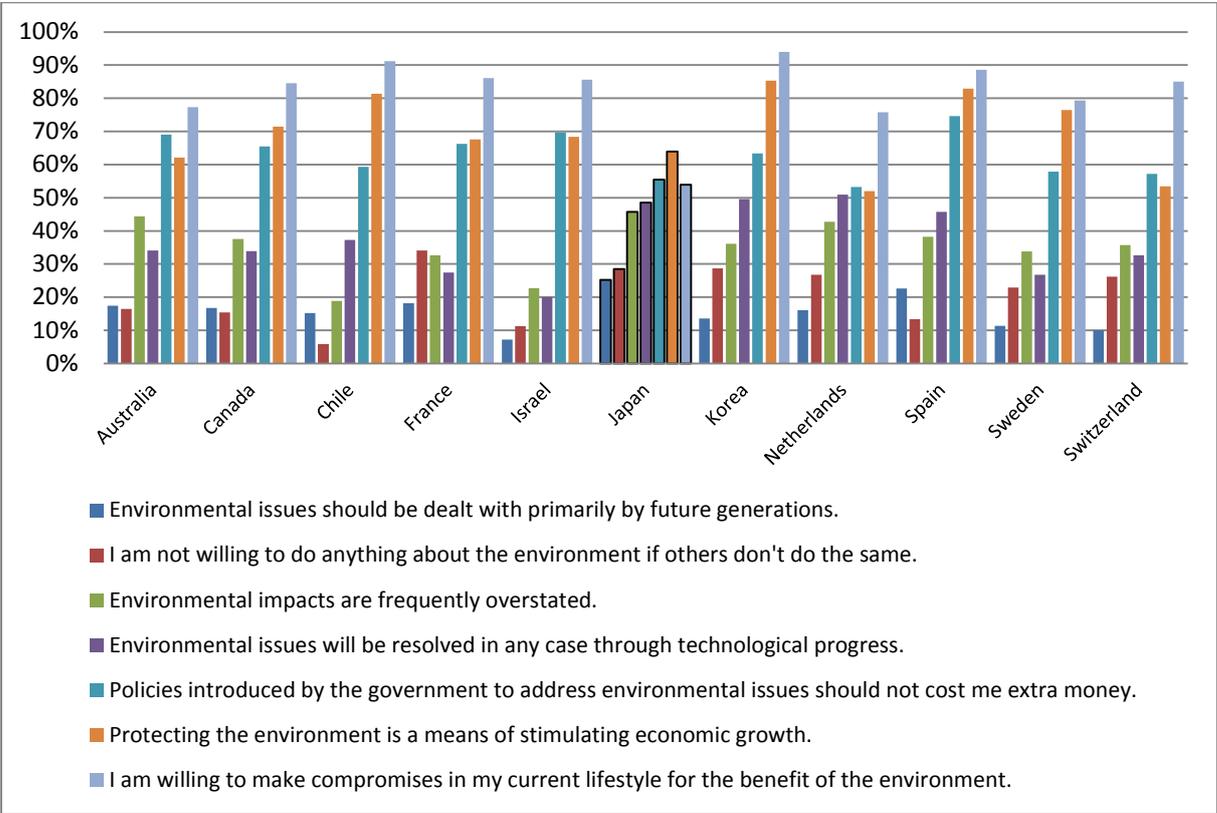
Respondents were also asked about the relative importance of specific environmental problems such as natural resource depletion, air pollution, waste generation, climate change, water pollution, as well as endangered species and biodiversity loss. "Climate change" emerged in Japanese responses as the most serious environmental issue facing the world today, as in Korea and Sweden, closely followed by natural resource depletion.

In the eleven countries surveyed, respondents were asked whether they agreed with a number of statements addressing different aspects of the environment (see Figure 1). Respondents agreed the most with *I am willing to make compromises in my current lifestyle for the benefit of the environment* in all countries except in Japan where the statement garnering the most agreement was: *Protecting the*

¹ OECD (2013), *Greening Household Behaviour: Overview from the 2011 Survey*, OECD, Paris. A follow-up publication presenting the main conclusions and policy implications from the 2011 Survey will be available in 2014. The results of the first round, carried out in 2008 in ten countries, are published in OECD (2011) *Greening Household Behaviour: The Role of Public Policy*.

environment is a means of stimulating economic growth. Agreement with the statement that *Environmental impacts are frequently overstated* was highest in Japan.

Figure 1. Levels of agreement with seven statements about environmental policy



Energy use

The survey collected data on households’ energy-related behaviour and in particular their responses to various types of policy measures targeting renewable energy and energy efficiency.

The impact of energy efficiency labelling that is used in each country/region was examined. The results indicate that in Japan the level of recognition of the energy efficiency label for appliances is below OECD11 with less than 60% reporting they recognise the label displayed to respondents. This suggests that there is still scope for improvement in energy efficiency with increased identification of the Energy Saving Labelling Programme introduced in 2000, standardised in 2006 and extended to new products, including air conditioners and fluorescent lights in 2008.

In the survey, a majority of the respondents claim not to have taken energy costs into account when purchasing or renting their current primary residence. Only 20% of the Japanese respondents reported that they take these costs into account, compared to 25% on average for all eleven countries surveyed. This suggests that there is a potential to bring about change by increasing awareness of energy conservation possibilities when changing residence using information tools such as labelling scheme for newly built detached houses introduced in Japan since September 2009.

The use of energy conservation grants for home insulation or financial support to install solar panels was also reviewed. There is great cross-country variation as regards support for investment in solar panels. Japan comes fourth with more than 60% of households who install solar panels for electricity or water reporting that they have benefited from government financial support. This reflects the impact of the subsidy and feed-in tariff scheme to encourage the installation of solar photovoltaic (PV) systems in the residential sector. Looking the results, only 12% of Japanese households who

invested in thermal insulation have reported benefiting from government support for thermal insulation. Investments are found to vary according to home ownership status, as can be expected. Renters in Japan and Israel have the lowest likelihood to have invested in thermal insulation.

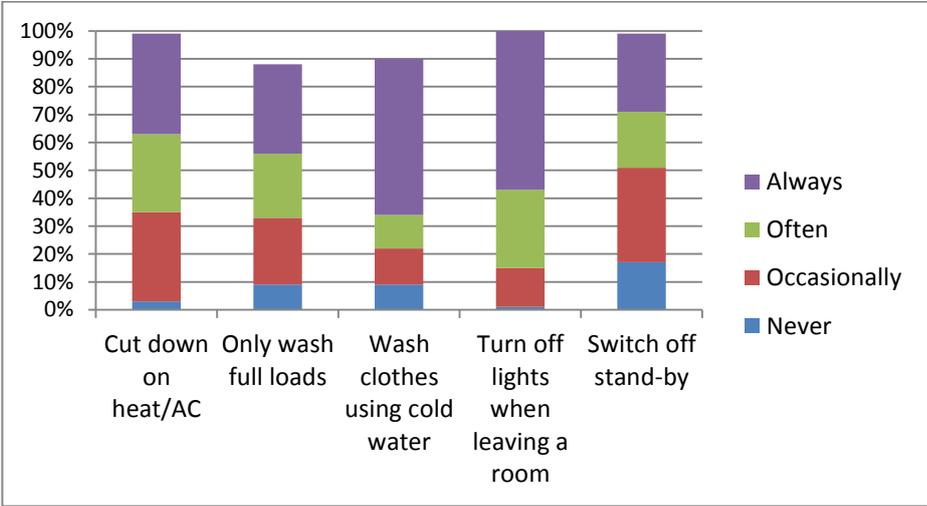
Different options for special electricity tariffs were considered in the survey. In Japan, like in a number of other countries surveyed, households can select differentiated electricity tariffs according to time of use. Although Japanese households have no choice of electricity or electricity suppliers currently, the possibility for households to select “renewable/green” energy tariffs in the electricity bill they receive or “renewable/green” energy suppliers is also under consideration in the Japanese Electricity System Reform. In addition, the government is encouraging electricity companies to introduce smart electricity meters so that they will be introduced to all homes and factories by early 2020s. The results of the survey suggest that latent demand for these special electricity services is potentially low in Japan compared other countries. Introducing more renewable energy may require complementary measures to steer demand such as raising public awareness.

Households were asked if they would be willing to change electricity provider, at no extra financial cost, so as to have access to “green electricity supply tariff”. The findings show significant differences between the countries. While the majority of respondents in Chile, Israel, Korea, Spain and Switzerland indicate that they would definitely be willing to change provider, the Japanese respondents appears as the least likely to do so with less than 20% indicating that they would be willing to make this switch. This illustrates the existence of barriers, perceived or real, to switching provider even when costless. An example of such barriers is provided by the Japanese situation where households do not have the possibility to choose their electricity provider and cannot select green tariffs.

Japan appears as one of the countries with the lowest percentage of households willing to pay anything to use only green energy (just above 50%). The lack of interest for renewable energy ranks high in the motivation of Japanese respondents for not wanting to pay extra use to renewable energy, compared to other countries in the survey. This implies that supply-side measures may have a significant complementary role to play if ambitious policy goals are to be reached concerning electricity generated from renewable sources.

In addition, the survey asked respondents how often they were performing different energy-saving behaviours. Turning off the light when leaving a room appears as the most common energy-saving activity in Japan, as in the other countries surveyed. Looking at the individual activities in more detail for Japan yields interesting insights (see Figure 2.).

Figure 2. Reported energy-saving behaviour by practice, Japan

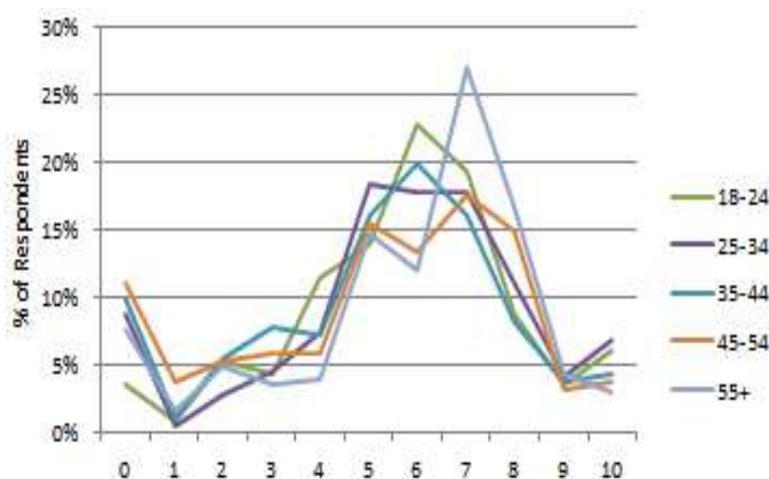


Japanese respondents are the most likely with Swedes to report that they “never” or “occasionally” cut down on heating and air conditioning to limit energy consumption or turn off lights when leaving a room. Japanese households are also the least likely to wait for full loads before using washing machines or dishwashers with only 55% of the respondents reporting that they do so “often” or “always” compared to almost 90% on average for the full sample. The fact that dishwasher is less diffused in Japan may affect this result.

In addition, Japan displays the highest percentage of respondents reporting that they “never” or “occasionally” switch off stand-by mode. These findings indicate that there is a wide scope for potential improvements in energy-saving behaviour at home. It emphasizes the role that the provision of information to consumers and education, such as the large-scale national information campaigns launched as part of the government’s energy-saving strategy in 2011, can play in this direction.

Specific questions were asked to Japanese respondents concerning the *Eco-point Programme* launched by the Japanese government in 2009 to encourage the purchase of energy-efficient household appliances (televisions, air conditioners and refrigerators).² The survey results indicate that the Eco-point system is widely known in Japan. 96% of the persons surveyed are aware of its existence. Almost three respondents out of four report that the Eco-point system motivates or strongly motivates the purchase of eco-friendly products. Looking more closely at how this motivation varies with age, the findings suggest that older households are more motivated by the Eco-point programme (see Figure 3.).

Figure 3. Importance of Eco-point system as a motivation to buy eco-friendly products by age



Note: 0 = Eco-point system does not motivate at all; 10 = strongly motivates.

Personal transport choices

On the basis of the survey responses, Japanese respondents are the most intensive users of their rail systems. Car owners from Japan report driving the least. Car users were asked how effective different factors would be in encouraging them to drive less. *Improved public transport* is ranked first in Japan as in the other countries surveyed. *More and safer cycling paths* comes second and comparatively high compared to other countries.

The survey also looks at the mean willingness-to-pay (WTP) for an electric car, by country, expressed at the additional percentage increase in the price of a conventional car in exchange for having the car powered entirely through electricity. The average additional WTP over all respondents

² The eco-points can be exchanged for so-called “green goods” and services listed in a catalogue prepared by the government. The programme terminated in 2011.

is about 20%. At its peak, it takes on values of as much as 38% for the Netherlands. The WTP value recorded in Japan is approximately 16%.

Japan has the highest percentage of respondents reporting that they have benefited from incentives for purchasing a fuel-efficient and/or a low-polluting vehicle. These findings reflect the importance of the Japanese government's *Green Vehicle Purchasing Promotion Measure* which has been in effect since 2009 as well as a number of other incentives designed to accelerate the wider development of environment-friendly vehicles used in Japan over time. The *Top Runner* standards for passenger vehicles were introduced back in 1998 as well as the mandatory display a fuel efficiency value. The Japanese fuel efficiency labelling system promotes public awareness of vehicles achieving or exceeding the *Top Runner* standards. The label shows the car fuel economy performance and allows the identification of vehicles that are 10% or 20% more fuel-efficient.³

The 2011 EPIC survey introduced a new question to examine the levels of support that respondents indicated for various types of policies for reducing CO2 emissions. Overall, the best-accepted measures are price bonuses for purchasing less polluting cars and investments in the public transport infrastructure. Increased fuel taxes are by far the least popular course of action in all countries, which is consistent with the low enthusiasm found for policies which increased the cost of car use. A notable exception is Japan, where imposing strict limits on vehicle fuel efficiency is the best-rated measure, whereas it is a very unpopular one in other countries.

Residential water use

Respondents were asked if they were charged according to how much water they use. Japan has the highest reported rates with Korea. This reflects the wide use of water metering in Japan where a two-part charge is now generally applied with a fixed charge and an increasing block charge component to encourage efficient water use. The lowest reported rates of volumetric charges are found in water-abundant countries like Canada and Sweden. While almost 5% of all respondents report that they do not know whether and how they are charged for water consumption, the results indicate that Japanese households have a high level of awareness only 1.5% answering "don't know". This figure is the highest in Canada (7.6%).

While almost one respondent in two states that it takes water efficiency into account when purchasing washing machines or dishwashers in the whole sample, Japan displays the lowest percentage with only 30%. This result suggests there is a margin for improvement in this area with increased awareness. However, it must be borne in mind that almost 30% of the total sample, and nearly 40% of Japanese respondents, state that they "don't know" whether they do so or that it is not applicable (if they are tenants for instance or they do not have a dishwasher, which is less diffused in Japan, as mentioned before, or washing machine).

The survey considered different water-saving behaviours. A comparison between countries shows that Japan has a relatively low percentage of respondents reporting that they "often" or "always" perform the following activities: collect rainwater/recycling waste water, plug the sink when washing dishes and water the garden in the coolest part of the day.

Responses to the questionnaire also provided information on investment in water-efficient equipment. The percentage of adoption of water tanks to collect rainwater low in Japan and few Japanese respondents reports having invested in low-volume or dual-flush toilets. The use of highly automated and very sophisticated toilets in Japanese toilets might explain this.

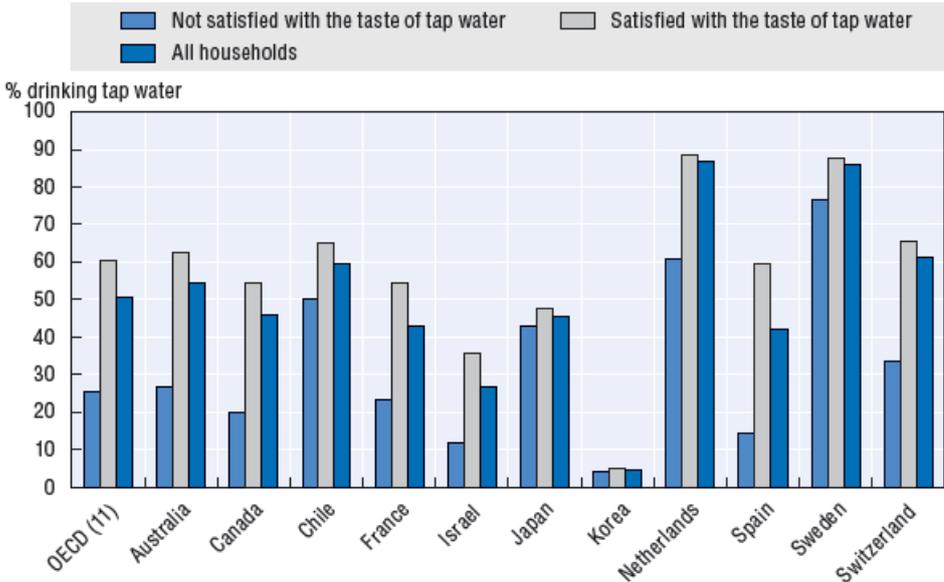
Findings for all countries surveyed suggest that low-income households with large families and living in urban areas are more likely to receive water conservation grants. Overall, the results show

³ Before the system was revised in 2012, the label indicated either the status of "fully compliant" or "plus 5% of the fuel economy standard".

that water charges, home ownership and regularly undertaking water-saving behaviours are strong predictors of the adoption of water-efficient devices. Social norms and general attitudes towards the environment are also found to have an important effect.

The survey also gathered data on household satisfaction with the quality of tap water and sources of drinking water. For all eleven OECD countries considered, the percentage of households drinking water straight from the tap is higher for those who are satisfied with its taste. However, taste seems to matter less for Japanese respondents where this difference is the smallest after Korea. (Figure 4)

Figure 4. Relationship between drinking tap water and satisfaction with taste



Note: In this case, those who respond 6 or over on a 10-point scale of satisfaction are considered to be "satisfied".

Finally, a specific question was asked to Japanese respondents to know if they were washing clothes with used bath tub water and 53% reported doing so.

Food consumption

Respondents were asked how much they were willing to pay as a price premium to purchase organic foods.⁴ In Japan, the reported median willingness-to-pay (WTP) for organic fruits and vegetables correspond to a 10% price increase, the same level of that in the countries surveyed. However, the results suggest variations among countries. Households' stated WTP extra for organic fruits and vegetables is highest in Korea and Switzerland and lowest in Australia and Canada. The wealthiest households state a higher WTP for organic fruit and vegetables in six countries including Japan.

Looking at factors that would encourage consumption of organic food, "lower prices" is ranked as the most important factor in all countries. "Higher trust in health benefits" is ranked as the second most important factor in Japan as well as in Israel and the Netherlands. It is interesting to note that for Japanese respondents, trust in health benefits would more strongly encourage consumption of organic food than trust in environmental benefits.

The survey looked at the impact of instruments directly targeting consumers' choices concerning food consumption, such as organic labelling. There is wide variation across countries in terms of the

⁴ In this survey, by organic we mean a production process where, depending on the standard, fewer chemicals (i.e. pesticides, fertilizers, drugs, additives), if any, are used.

levels of recognition and trust in labels. In Japan, only one respondent in four recognised the national organic label displayed, this percentage is quite low among the countries surveyed. For those who recognise the label, approximately 65% understand it and 75% trust it. As a comparison, in the European Union, trust in the new organic food label varies from 47% in Sweden to 83% in the Netherlands among respondents who recognised it. As far as organic fruit and vegetables are concerned, respondents who recognised the national organic label and those who trust it have higher mean expenditures, and this has implications for policy makers.

Respondents were also asked how useful information on animal welfare would be on a product label. Japanese respondents were the least likely to consider that a label providing information on the respect of animal welfare would be useful to them with the Koreans. The countries where the information is considered the most useful, on average, are also those with the highest average willingness-to-pay for meat and poultry that take animal welfare into account (Chile and Switzerland).

Food waste can represent a high proportion of household waste and raises particular concerns in some countries like Israel and Korea. In order to provide some insights on this issue, respondents were also asked to estimate the percentage of food bought by their household which was disposed of. Japanese respondents report that approximately 10% of food is disposed of. This percentage corresponds to the median value of most of the countries surveyed. There is significant cross-country variation, with the median ranging from 6% in France to 15% in Korea. Younger respondents report higher levels of food waste. Those concerned with natural resource depletion are less likely to dispose of food.

Waste generation, recycling and prevention

Respondents were asked the size and the number of bags of waste they put out for disposal on average per week. Results from the data suggest that in Japan, households generate comparatively less mixed waste per capita than in most of the other countries surveyed and that waste generation rises with income.

Japan has the highest number of respondents reporting that they are charged according to how much mixed waste with Korea and Switzerland. The use of variable charging for Japanese households has progressed over the past years and more than 60% of municipalities have implemented volume-based schemes where waste is collected only when placed in special prepaid bags. It can be noted that one-third of the all respondents surveyed report not being charged or not knowing how they are charged. This figure is the highest in Japan.

When looking at the percentage of Japanese respondents who express some level of support for unit-based waste charges according to whether they are subject to such charging systems or not results suggest that those paying according to how much mixed waste they generate (PAYT) are significantly more likely to be supportive than households unfamiliar with this system.

Among the countries surveyed, waste-related labels providing information on to the recyclability of the product or its recycled content are rarely used. Japan (identification on plastic and paper containers and packaging) is an exception with Korea and Israel.

Respondents were also asked how they were disposing of waste containing hazardous materials. Two common types of wastes causing potential environmental and health damage were considered: old electronic equipment and old and unused medicines. Across the 11 countries surveyed, 12% of respondents reported disposing of their old electric equipment with their mixed waste collection, and 34% disposed of old or unused medicines in their mixed waste. Japanese respondent reported a slightly lower percentage (9%) for electronic equipment due to the fact that the Home Electric Appliance Law was enacted in 2001, and consumers are responsible for handover of waste home appliances (air-conditioners, televisions, refrigerators/freezers and washing machines/cloth dryers) to retailers, but a much greater percentage (56%) for unused medicines disposed of as part of the household mixed waste collection.