

Order of Friars Minor

**CARE FOR CREATION
IN THE DAILY LIFE
OF THE FRIARS MINOR**



**Office for Justice, Peace and the Integrity Of Creation
Rome, 2011**

“Following closely in the footsteps of Saint Francis, the friars are to manifest a reverent attitude toward nature, threatened from all sides today, in such a way that they may restore it completely to its condition of brother and to its role of usefulness to all people for the glory of God the Creator” (GGCC 71).

“The Friar Minor welcomes everyone with kindness, without excluding anyone, and loves all people, especially the poor and the weak, whom he serves with motherly care. He rejects violence, works for justice and peace and respects creation” (RFF 21).

Formation in the Franciscan tradition seeks “to propose a Franciscan theology that responds to the challenges of our time:

- a theology of Creation that nourishes the praise of the Creator, teaches people respect for created things and brings the light of faith to bear on the ecological problems of our time;
- a theology and a Christology that present the salvation and the liberation offered by God in response to the appeals and the needs of the poor of today;
- a theology that leads to respect for the human person and his/her rights;
- a theology that aims at the construction of a fraternal world (justice, peace, ecumenism);
- a theology that is firmly tied to an eschatological vision in which one finds the strength for a daily self-commitment” (RFF 227).

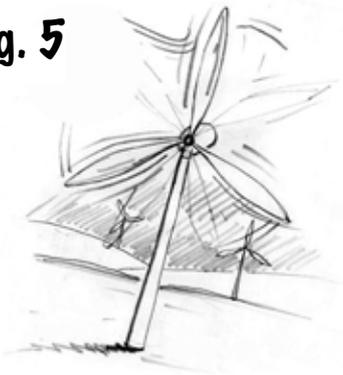
“In the next six-year period (2009-2015) all the Entities of the Order, with the help of the JPIC Office, should commit themselves to examine the impact of our life style on creation, especially regarding climate change, and promote environmental justice in order to highlight the relationship between social and ecological themes” (OFM 2009 General Chapter, Mandate 43.2).

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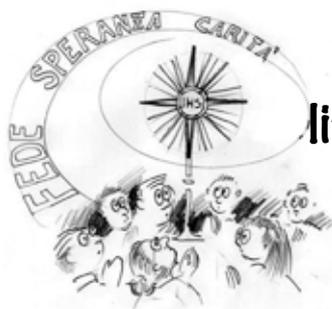
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Canticle of the Creatures

Most high, all powerful, all good Lord!
All praise is yours, all glory, all honor, and all blessing.

To you, alone, Most High, do they belong.
No mortal lips are worthy to pronounce your name.

Be praised, my Lord, through all your creatures,
especially through my lord Brother Sun,
who brings the day; and you give light through him.
And he is beautiful and radiant in all his splendor!
Of you, Most High, he bears the likeness.

Be praised, my Lord, through Sister Moon and the stars;
in the heavens you have made them bright, precious and beautiful.

Be praised, my Lord, through Brothers Wind and Air,
and clouds and storms, and all the weather,
through which you give your creatures sustenance.

Be praised, My Lord, through Sister Water;
she is very useful, and humble, and precious, and pure.

Be praised, my Lord, through Brother Fire,
through whom you brighten the night.
He is beautiful and cheerful, and powerful and strong.

Be praised, my Lord, through our sister Mother Earth,
who feeds us and rules us,
and produces various fruits with colored flowers and herbs.

Be praised, my Lord, through those who forgive for love of you;
through those who endure sickness and trial.

Happy those who endure in peace,
for by you, Most High, they will be crowned.

Be praised, my Lord, through our Sister Bodily Death,
from whose embrace no living person can escape.
Woe to those who die in mortal sin!
Happy those she finds doing your most holy will.
The second death can do no harm to them.

Praise and bless my Lord, and give thanks,
and serve him with great humility.

INTRODUCTION

It is well known that throughout history humankind has profoundly transformed ecosystems. In some cases, these changes can have irrevocable results, as with deforestation, loss of species, and the increasing scarcity of water in some regions while others suffer strong hurricanes and floods. Other cases include unlimited urbanization of fertile farmlands and the uncontrolled exploitation of human resources. Environmental destruction, which is influenced directly or indirectly by the world economy, is seriously jeopardizing human life on earth. The persistent use of fossil fuels and the pollution of land, water and air due to use of chemical fertilizers are causing not only the destruction of flora and fauna, but are also generating unforeseen climate change which is a real threat to human existence.

The causes of this grave and real deterioration in the environment are complex, but there is no doubt that one of the most important is the current model of predatory and unjust development. The economic system that is the origin of the rupture between North and South is also the reason for the exploitation of nature. Rich countries assault the environment with a lifestyle based on consumption, depleting resources and producing a quantity of waste that the environment cannot absorb. At the same time poor countries exploit their resources to combat the misery in which they live. Responsibility for this situation does not belong to those who govern or to international organizations and transnational companies alone, but to citizens like us as well, who reinforce this model of development through our lifestyle.

It is necessary **to replace our present model of development with a sustainable one**¹ by finding modes of production and consumption that are truly sustainable.² We need to change our lifestyle, i.e., the way we do things in our daily lives. Without our knowing it, our lifestyle may actually be contributing to the deterioration of the environment. In this paper we will concentrate on our lifestyle. We will review the impact of our personal lifestyle and that of our fraternities on the environment, allowing us to take steps that improve our relationship with the environment.

Throughout history religious, and Franciscans in particular, have promoted a simple lifestyle and respect for nature, recognizing it as God's creation. But what can we do in the world today? The negative impact of industry and trade on nature is astounding. However, it is also true that in a free market society every individual who participates in the market plays an important role. Change can and should occur on the various levels of our societies.

Religious communities can play an important role in giving witness to a sustainable way of life. Based on our Christian faith and the spirituality of St. Francis, we can make our lifestyle more sustainable. This implies a way of life that considers good relationships with all of creation as more important than consumer goods. This includes our brothers and sisters, the people with whom we interact, and also all creatures. Water, animals, plants, the earth, the mountains, rivers, the sea...each has its place in our lives. Saint Francis saw the face of the Creator in each creature. He respected the needs of each creature, as we see in the story of the Wolf of Gubbio. Francis took into consideration the needs of both the people and the wolf. He was thus able to restore peace and harmony.

Our GGCC tell us "following closely in the footsteps of Saint Francis, the friars are to maintain a rever-

1 The term **sustainable development** refers to socio-economic development. It was used formally for the first time in the Brundtland Report (1987). This document was produced by the United Nations World Commission on Environment and Development, created by the UN General Assembly in 1983. Principle 3 of the United Nations Rio Document (1992) picks up on this idea and expresses it in terms of the right to development: "The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations."

2 **Sustainability** refers to the equilibrium between a species and available resources. By extension it can be applied to the exploitation of a resource below its limit of renewability. A typical example would be use of wood from a forest. If you cut too much, the forest disappears; but if you use the wood below a certain limit, there is always wood available. In the latter scenario the use of wood is sustainable. Other examples of resources that are sustainable or not, depending on the speed of exploitation, are: water, fertile land and fish.

ent attitude towards nature, threatened from all sides today, in such a way that they may restore it completely to its condition of brother and to its role of usefulness to all people for the glory of God the Creator" (CCGG 71). This brief text expresses the essential attitude which we Franciscans should have toward our sister-mother earth. It is one of respect and care.

But we religious are also members of society and our lifestyle is influenced by the societies in which we live. Some lifestyles are good and sustainable; others are not. To make our lifestyle more sustainable and to respect and care for creation effectively, we have to translate the values of our Franciscan spirituality into the contemporary lives we live.

How do we accomplish this? The overwhelming evidence is that our lifestyle is highly unsustainable. What are the real possibilities for changing our lifestyle? What should we change to make things better?

One possibility is the path proposed in this paper, which is an attempt to help friars and fraternities to evaluate the impact of our lifestyle on the environment and to develop new habits which will allow us to implement Mandate 43.2 of the 2009 General Chapter. It states: "In the next six-year period (2009-2015) all the Entities of the Order, with the help of the JPIC Office, should commit themselves to examine the impact of our lifestyle on creation, especially regarding climate change...."

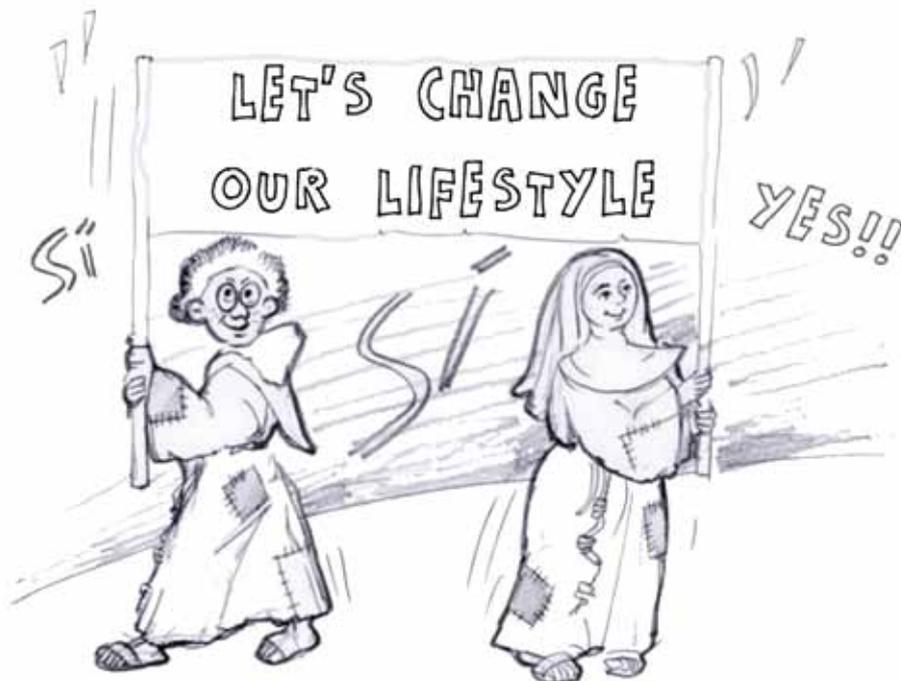
In order to care for creation we propose a moderate, sober and just use of resources, beginning with the famous three R's of ecology (reduce, reuse and recycle). We should avoid what is superfluous and wasteful, without ceasing to enjoy the small things that are a part of every day life. Voluntary detachment from things, simplicity of life and joy for the gift of existence are Franciscan attitudes of reverence for creation and of concern for the common good. We are not proposing stoic renunciation but rather the joyful freedom of someone who prefers to consume less in order to promote more the wellbeing of people, especially in regard to human relations. We seek to know what is essential for human happiness, and what is superfluous. The superfluous takes up vital space, brings on stress, and dampens love for life.



Changing Our Lifestyle: How Do We Do It?

We need to consider three steps:

1. Reflect on the fundamental values that can help us live in a more sustainable manner. (We will not provide a reflection on the care of creation in Franciscan spirituality because there are good documents that already do this.)
2. Study the actual impact of our lifestyle on the environment. We propose nine areas of daily life that can help with this analysis (be aware that this study could have different applications in different parts of the world). It is not necessary to analyze everything at once. Begin with the areas that you see as most important for your life. The nine areas, listed below, are separate and can be used independently of each other:
 - Water
 - Energy
 - Garbage and waste
 - Packaging
 - Paper, batteries and toxic substances
 - Transportation
 - Food
 - Fair Trade
 - Liturgy and prayer
3. Beginning with the previous analysis, the fraternity can elaborate a realistic and sustainable program to improve its interaction with the environment.



1 OFM General Curia, *Pilgrims and Strangers in this World* (A resource for ongoing formation from chapter IV of the OFM General Constitutions), Rome 2008, chapter III, pp. 59-82; I Delio, K.D. Warner, P. Wood, *Care for Creation. A Franciscan Spirituality of the Earth*, St. Anthony Messenger Press, Cincinnati 2007; M. Hubaut, J. Bastaire, *Approche franciscaine de l'écologie*, Les Editions Franciscaines, Paris 2008; J.A. Merino, *Francisco de Asis y la ecología*, PPC, Madrid 2008; A. Marini, *Sorores Alaudae. Francesco d'Assisi, il creato, gli animali*, Porziuncola, Assisi 1989.

WATER

Water is one of the most necessary of natural resources, and one of the most useful for human beings. Access to water is now considered a basic human right. Its correct use is vitally important not only for us, but for the environment.

The Influence of Our Activity on Water:

Water is a renewable but limited resource. Although three quarters of the earth is covered with water, only 1% is available for human use. However we use it (irrigation, refrigeration, hygiene), our use increases its evaporation. Not all the water that evaporates returns to the earth, because part falls as rain into the sea. This, together with climate change that appears to be creating drier conditions, will make less water available for our use. So our goal should be to reduce consumption and also to promote consumption that is more responsible, rather than to increase supply.

Besides the problem of scarcity itself, with all its implications, there is also the problem of pollution of the scarce supplies that do exist. Without our interference, pollution that occurs naturally in rivers and seas could easily be handled by the process of self-purification. But our daily activities change the dynamic of natural cycles and provoke an accumulation of residues in key places that decreases the ability of water to purify itself, thus causing pollution.

Beyond these immediate problems, human activity in relation to water is also causing changes in vegetation and in the top layer of the earth which sustains that vegetation. The consequences of this damage are, among others, floods, pollution of water in reservoirs, erosion and desertification.

Pollution Is Intimately Tied to Industrial and Agricultural Activity, But Also to Our Own Domestic Activity.

It is increasingly difficult to meet new demands for water in urban areas because we are close to the end of our options. In the process of expansion most cities have sought sources that are more and more distant from the cities themselves. Some have opted for aqueducts, which tend to lose large amounts of water in transport, and which also have a great impact on the environment due to the channels that need to be constructed. Other cities are turning to wells and reservoirs.

In dealing with this problem we need to start from the origin of the scarcity, and find ways to use water responsibly, without wasting it. We must use common sense and look toward the common good. The way we use water today will greatly affect its availability tomorrow. One way to address the issue of water use is to consider its price. If a just price is paid for water, we find that the value of the water a country uses exceeds that of the oil it uses.

Sustainable Management of Water:

We need to manage water in such a way that its use be compatible with conservation of our ecosystems. Good management will look to:

- Lessen the use of water by reducing consumption, by recycling and by reusing the supply to the maximum.
- Extract water with the least damage possible to ecosystems; leave enough so that rivers, wetlands and subterranean aquifers can pass through their natural cycles (nature itself needs water!).
- Process used water in such a way so as to minimize its impact on ecosystems. One of the best solutions to this issue is to contaminate the water as little as possible when using it, and to adopt proper purification techniques.
- Purify water with minimum energy use and ecological impact.
- Conserve the earth and its plants. Take special care of the vegetation on river banks, because it is fundamental for the natural purification of water and to guarantee biodiversity.¹

1 **Biodiversity** (from the Greek *βιο-*, life, and the Latin *diversitas*, variety), also denominated

What Can We Do?

- Turn off faucets when not using water (brushing teeth, soaping up when we wash our hands or take a shower, while washing anything). Allowing water to run for one minute represents a loss of 2 to 5 liters.
- Take a shower more frequently than a bath.
- Repair leaks and breaks as rapidly as possible (one faucet or toilet that drips can waste up to 5000 liters of water a year).
- Install storage tanks and low-use faucets.
- Fill the washer with clothes, economize on water (no half-loads)
- If you have a garden, practice xeroscaping (drought tolerant landscaping). Design the garden for low water use.
- Do not throw waste into the toilet: oil, cigarette butts, etc. Cigarette butts should be thrown into the trash and petroleum products (like paints and varnishes) should be placed in a bottle or jar and taken to recycling centers.²
- Avoid throwing contaminants or toxic substances into the sink: detergents, soaps, oils. In spite of purifiers, they still leach into the rivers. Some cleaning products contaminate less than others. Use them accordingly.
- Reduce consumption of detergent and softener in washing machines. (Manufacturers usually recommend larger amounts than are really needed.)
- Buy appliances that are energy and water efficient.

For Community Reflection;

- **How can we improve our communal use of water?**
- **Decide what to do and evaluate the decision in six months by reading the water meter and looking at the water bill: how much water and how much money have been saved?**



biological diversity, is a term which refers to the ample variety of living beings present on Earth and the natural patterns in which they are found. This arrangement is the result of thousands of millions of years of Evolution according to natural processes, with a growing influence due to human activity. Biodiversity also includes the variety of ecosystems and the genetic differences within each species which allow the combination of multiple life forms. Their mutual interaction with the rest of the environment serves as the foundation of life on the planet.

2 At certain recycling centers residual substances are accepted free of charge. These substances should not be placed in the regular trash, nor should they be thrown in the sink or toilet, either because of their large volume or because they are dangerous. Check with your local recycling center for the list of substances that they will accept.

ENERGY

Wherever human beings go about their daily activities they need energy. Everything around us needs energy to function, or it required energy in its production. For this energy to be available, huge amounts of combustible fossil fuels are burned (oil, coal, natural gas), provoking the emission of gases like carbon dioxide (CO₂) into the atmosphere. Such emissions produce the "greenhouse effect,"¹ one of the important causes of climate change. The elevated quantity of these gases alters the interchange of energy between the inner and outer atmospheres, causing variation in the climate of our planet.

Burning fossil fuels affects the environment not only when generating electricity, but also when extracting the raw material, transforming it, transporting it, using it in the cities and finally in managing the waste (solids, liquids and gases) that have been produced.

In the case of oil, for example, (transport, heating, producing plastics, nylon and polyester...) extraction too often occurs in very valuable natural ecosystems like rain forests or oceans, provoking pollution, deforestation and expulsion of indigenous peoples from their habitat. To transport the oil, thousands of kilometers of pipeline have been constructed, or huge oil tankers are used, at times leading to dramatic and catastrophic accidents.

In the case of coal, it is mined in one place and used in another, necessitating transport, sometimes from one continent to another. And the generation of electricity in thermal power centers is a process that causes a good deal of pollution, especially in coal-powered plants.

Nuclear Energy is Not the Solution

- Nuclear power plants emit radioactivity into the atmosphere.
- They generate radioactive waste that is dangerous for hundreds of thousands of years.
- A higher incidence of cancer has been detected around certain nuclear plants.
- To this point the accident at Chernobyl (Ukraine, 1986) has caused 20,000 deaths. We now face unforeseeable devastation from the nuclear catastrophe in Fukushima, Japan, brought about as a result of the earthquake and tsunami (March 2011).
- Nuclear energy is very expensive, and can only be sustained with substantial State investment.
- The Kyoto Protocol does not include nuclear energy as a means of lessening climate change.

What Steps Do We Need to Take?

To stop climate change and to reverse the damage it causes, we need to work at the personal, the communal and social levels. Four ways to address the issues are:

- **Promote energy that is clean and renewable:** solar, wind, water, energy produced from forest and farm waste. In just a few decades they can provide all the energy we need.
- **Save energy** by not wasting it.
- **Use energy in a rational and efficient manner** in cities, buildings, industry, for transport, in the home.
- **Support and cooperate with others** who defend the three previous points.

¹ The **greenhouse effect** is a process by which radiative energy leaving a planetary surface is absorbed by some atmospheric gases, called greenhouse gases. They transfer this energy to other components of the atmosphere, and it is re-radiated in all directions, including back down towards the surface. This transfers energy to the surface and lower atmosphere, so the temperature there is higher than it would be if direct heating by solar radiation were the only warming mechanism. **Global warming**, a recent warming of the Earth's surface and lower atmosphere, is believed to be the result of a strengthening of the greenhouse effect mostly due to human-produced increases in atmospheric **greenhouse gases**, like carbon dioxide and methane. See: Wikispaces: green house effect.

What Can We Do?

a) Lighting:

- Turn off the lights when leaving a room.
- Use natural light whenever possible, turn on only the lights farthest from the windows, and work at the tables closest to the natural light.
- Use low energy bulbs (compact fluorescents): they last nearly 10 times longer and use 75% less energy than incandescent bulbs. Fluorescent bulbs save most in places that need continuous and prolonged illumination.
- Use halogen lamps (spot lights) for direct lighting of objects (pictures, works of art), or for concentrated focal points. They are not good for lighting an entire room.
- Replace normal switches with dimmers in areas that do not need constant maximum illumination.
- Install sensors in hallways, bathrooms and other places of occasional use.
- Clean lamps and bulbs regularly. Dust can reduce the lighting power of a bulb by as much as 20%.

b) Heating and Air Conditioning:

- Keep heat at around 20-21° Centigrade (70-72° Fahrenheit). By lowering the temperature just one degree, there is an energy savings of 10%!
- Choose a heating system with a thermostat that turns off the boiler when the temperature reaches a pre-programmed level. Putting thermostatic valves on every radiator allows you to vary the temperatures for each room; you can keep rooms at different temperatures according to need.
- Do not block circulation of warm air, or cover radiators in any way.
- Turn off the heat or air conditioning after using bedrooms or meeting rooms that will be out of use.
- Service the boiler annually; a poorly maintained boiler produces less heat, consumes more fuel and pollutes more.
- Avoid heat loss. Fix windows that do not close well. Lower the shades at night or when not at home. Cover the space at the bottom of doors. Even better, insulate the house: walls and ceilings; install double-paned and hermetically sealed windows.
- Heat through the floor to guarantee a considerable saving of energy. It uses hot water at 30-35° C (86-95° F), which is considerably less than in radiators. Furthermore, the reduced temperatures make the boiler work much better with thermal solar panels.
- In the summer, regulate the air conditioner to no more than 8° below the outside temperature, and turn it on only when necessary. If we raise the temperature of the air conditioner by only one degree, there is an energy saving of up to 8%!
- Do not leave the air conditioner on when away from home for a long time or when windows are open to air out the house.
- Clean the filters of the air conditioner often.

c) Work equipment:

- Buy computers and electrical equipment that require less energy. Products that are energy efficient and follow safety and environmental standards can be recognized by a label which guarantees their quality (generally tagged with the labels *Energy Star* or *Ecolabel*).
- Program your computer and screen to switch to stand-by when not in use for a certain length of time. But avoid staying on stand-by for long periods of time because this function also contributes to energy consumption. (A TV turned off with the remote stays on stand-by; 10% of home energy consumption is attributable to items left on stand-by.)
- Turn off the main switch or pull the main plug at the end of the working day: computer transformers consume energy even when turned off.
- Turn on photocopiers and printers only when necessary.
- When going up two or three floors avoid using the elevator and use the stairs, if possible. The exercise is good for your health and each trip not taken provides a savings of almost 30 watts.

d) Household Appliances

- Buy fewer small appliances that you really do not need (like electric fruit squeezers), and use the ones you have less frequently.
- Check the energy labels on appliances (washers, refrigerators, dishwashers, etc.) before buying them. Try to buy class A appliances (with green labels). A product in the A class consumes about 30% less energy and produces less pollution as well.
- Use washing machines and dishwashers only when full and at lower temperatures.
- Position refrigerators and freezers away from heat sources like radiators and windows.
- Keep the thermostat in refrigerators and freezers on an intermediate setting. Very low temperatures are not useful for preserving food.
- Do not put hot food into the refrigerator or freezer (it causes frost build-up).
- Defrost the freezer regularly: a layer of frost of more than 5mm (roughly one-fifth of an inch) acts as insulation and increases energy use.
- Limit the pre-heating of ovens.
- Keep bathroom water temperature in the intermediate range [not over 55° C (130° F)].
- Install the bathroom water heater near where the hot water will be used to avoid losing heat in long pipes.
- Do not keep the TV and other electric appliances (modem, video camera) on standby when they will not be used for long periods of time.

For Community Reflection:

- **Read this information on energy use. Make realistic community decisions that will help achieve a more efficient, austere and sustainable use of energy.**
- **After four months, take a look at the meter and the electric bill; compute how much energy and money have been saved.**



Garbage and Waste

Use It and Throw It Away:

Consumerism is inevitably associated with squandering our natural resources, pollution, and the creation of more and more waste. Where do we find the raw materials for so much consumption? Where are we going to put so much garbage? The capacity of nature to provide resources and assimilate our waste is limited.

Bottles, cans, containers, billions of plastic bags, clothes that we replace much more frequently than before, razor blades, toys, batteries, domestic appliances, computers, furniture, paper, organic matter and toxic products like cleaning agents, cosmetics, paint, insecticides and medicines....

What Can We Do With Our Waste?

Our consumer society has become a garbage society. In the cities of industrial nations there is garbage collection, but the volume of trash continues to grow. Part is recycled, but the greater part is burned in incinerators.

In developing countries, 25 to 50% of solid waste remains uncollected, and poses a serious threat to human health.

Incinerators Are Not the Solution

- They emit dioxins and furan¹ into the atmosphere. Both are very toxic even in low concentrations.
- Incinerators leave ash and toxic residue equivalent to one third of the garbage burned.
- Although in some cases the energy produced by incinerators can be used, it is not equal to the energy that would be saved if trash were recycled.

Reduce, Reuse and Recycle

Our garbage and waste produce a large quantity of methane. Methane is a greenhouse gas and is more dangerous than CO₂. Every kilogram (2.2 pounds) of methane dispersed into the air produces the same greenhouse effect produced by 21 kilograms (46 pounds) of carbon dioxide. For this reason we must have another plan to deal with our garbage. The three ecological R's are the key to a proper response to this problem: reduce, reuse and recycle.

What Can We Do?

- A. REDUCE:** The first rule for the protection of the environment is reduction of consumption. It cuts down on waste of natural resources, on the amount of trash and on pollution. Avoid:
- "Use and throw-away" products.
 - Excessive packaging.
 - Non-refillable lighters, single-use cameras.
 - Plastic or styrofoam trays for meat, vegetables, etc., because they are made with strong pollutants.
- B. REUSE:** Reuse the same object many times.
- Do not throw things away when they break—fix them.
 - Reuse bags, boxes, envelopes and other containers.
 - Give priority to articles with ecological labels. It promises a longer life for the product, due to replacing different parts of the product (check availability of spare parts).
 - Choose products made of recycled materials.
 - Choose products with returnable containers.
 - Choose family or industrial sized containers over smaller ones.

¹ Furan is a heterocyclic organic compound. It is a colorless, flammable, highly volatile liquid with a boiling point close to room temperature. It is toxic and may be carcinogenic.

C. RECYCLE: our garbage may become a new resource.

- Cardboard and magazines can be made into boxes.
- Recycled plastic can be used to produce water pipes, mattresses, bottles, containers, automobile parts....
- Glass and aluminum can be recycled to make new products of glass and aluminum.
- More than 50% of domestic waste can be recycled as compost.
- Practice selective collection of garbage. Keep up the pressure on authorities where it is not yet practiced.
- Use recycled paper.
- Use both sides of paper. Used sheets of paper can serve as note pads.
- Collect furniture, computers, household appliances, etc., for reuse or to recycle their parts.

For Community Reflection:

- **What throw-away items are used in the house? Could you find substitutes for some? Eliminate others?**
- **What items can be reused? What ones recycled?**
- **In places where there is selective collection of garbage, does the community always separate the trash?**
- **Make some concrete decisions.**



PACKAGING

The production of single-use containers has been growing alarmingly. It means that an enormous amount of raw materials and energy are wasted for the sole benefit of the packaging industry and mega-supermarkets. Among the different kinds of packaging, we find:

a) Tetra Brik: we need to pay special attention to tetra brik, which is made of three materials: cardboard, polyethylene and aluminum. To produce the amount of tetra brik that is in demand, millions of trees are cut down for the cardboard, hundreds of thousands of tons of bauxite are mined for the aluminum, millions of barrels of oil are used for the ethylene. Furthermore, tetra brik requires four times the amount of water needed to produce a glass bottle, and it cannot be reused.

b. Plastics: they are hydrocarbons made from the molecular break-up of naphtha, a substance of low molecular weight derived from the distillation of petroleum. Many plastic containers are not biodegradable; in addition, they are hard to recycle. Plastic bags have become our habitual companions, and are one of the most absurd symbols of consumerism. They invade rivers and oceans. They pile up in rubbish dumps where those that are not biodegradable remain for many years. If burned they produce emissions that are extremely contaminating. The same holds true for plastic bottles. And the plastic industry is one of the most polluting that exists.

c. Glass: glass production requires a relatively simple technology that has been around for centuries. Basic materials are quartz sand, sodium carbonate and limestone, all of which are quite abundant in nature. In production, if 90% of the material used is recycled glass, a saving of energy of up to 75% can be realized. The problem with glass is its fragility and its weight, and, like the production of any item, there is a certain impact on the environment at the time of production, in transport, etc. **But if we consider the environmental impact of packaging during its life cycle, glass offers the most advantages in comparison to other containers.** This is the case because it is reusable and 100% recyclable, needs few primary materials, generates little waste or pollution and requires little energy to produce, especially in local distribution systems (which functioned well until the arrival of multinational distribution companies).

d. Metal: at present, many of the cans/packages that we use (beer, soda, potato chips, chewing gum, etc.) are made of aluminum. The aluminum industry is considered a highly polluting one. The mining of bauxite causes land degradation that is almost irreversible and emits large quantities of dust. The production of aluminum causes emissions of sulfur dioxide, tar vapors and fluoramine, an acidic gas that is very dangerous for health, and it requires a great deal of energy. Aluminum cans are not reusable, and they will likely not undergo biodegradation in the dump, since they do not rust. If sent to an incinerator, they emit heavy metals into the atmosphere.

What Can We Do?

- To be a responsible consumer, it is necessary to recognize each kind of packaging and know how to dispose of it. Evaluate the impact of your consumption and use containers that cause least damage to the environment.
- Imagine how many plastic bags would be saved if you used a cloth bag instead.
- Reuse plastic or paper bags; remember to take one when you go shopping; use a bag only when necessary. Get accustomed to carrying a bag in your backpack or purse; you will not need a new bag if you buy more than expected.
- Do not buy water in plastic bottles. Installing a filter in your house in order to make use of tap water will provide water that is just as good. Also, you will eliminate problems caused by use of plastic.

For Community Reflection:

- Friars might decide not to accept plastic bags when making even the smallest purchase.
- Discuss in community whether bottled water is really necessary or whether a filter might be installed to use tap water. If the decision is made to buy water, it could be bought in reusable glass bottles. The same is true for milk and other drinks: glass bottles are better than tetra brik or aluminum cans.
- It is very important to sort containers for garbage collection.
- What other decisions can be made? Be concrete!
- Six months after making the decisions in regard to these issues, schedule a communal evaluation of the process and its results.



PAPER, BATTERIES, TOXIC PRODUCTS

1. Paper

We are accustomed to using paper without thinking. It requires cutting down all kinds of trees and planting species that grow quickly. The process can provoke desertification and ecological change, especially in the developing world where most of the wood we use comes from. We all know that the forests are essential for the balance of life on the Planet.

A ton of paper is equivalent to two cubic meters of wood, which represents ten trees. Producing paper also demands use of water and energy, and then needs to be transported. We also expect our paper to be white, and the bleaching process uses large quantities of bleach, which is very contaminating.

Before buying paper, be aware of the different types that are available:

- a. Recycled paper:** The raw materials used to manufacture recycled paper are used paper or cardboard, or unused trimmings from new paper.
- b. Ecological paper:** It considers the environmental impact of the entire life cycle of the product (production, use and final destination as trash).
- c. Bleach-free paper (TCF):** Paper whose virgin fiber has been produced using alternatives to chlorine in the bleaching process. It would also include paper with low chlorine content (EFC).
- d. German blue angel paper:** It is 100% recycled and chlorine free.

What Can We Do?

- Try to use less paper. Consider whether you actually need a copy before you print something. Use both sides of the paper.
- Use recycled paper as your first option, or at least ecological paper.
- Reuse gift wrapping.
- Separate paper and cardboard and put them in their proper recycling containers.

B. Batteries

The metals and chemical products in batteries are prejudicial to the environment, and once their metal wrapping is damaged, they produce chemical contamination. It is very important not to throw them into the trash (in some countries it is against the law). They should be taken to recycling centers. In some countries, the stores that sell them also take responsibility for used batteries.

To a greater or lesser degree these substances are absorbed by the earth and filter into the aquifer, then enter the food chain and pass directly into living beings.

Studies indicate that a micro mercury battery can contaminate up to 600,000 liters (158,520 gallons) of water. A zinc-air battery contaminates 12,000 liters (3,170 gallons) of water and a silver oxide battery contaminates 14,000 liters (3,698 gallons) of water. Disposal of batteries is dangerous because they must be treated with care, following the warnings that outline all technical and legal procedures for dealing with dangerous substances (cf. Wikipedia articles on batteries).

What Can We Do?

- Reduce use of batteries by using solar calculators, games without batteries or by listening to music on the internet.
- Use rechargeable batteries, which can be used many times.
- Keep a special container handy for used batteries. Do not throw them into the trash, they are highly contaminating!
- Assign one friar in the community to collect used batteries and take them to the appropriate place for recycling.

C. Toxic Substances:

In our homes we use many toxic products which create dangerous waste: cleaning products, cosmetics, paints, insecticides, air fresheners, PVC articles, batteries, etc. They are very harmful for health and end up in drains or dumps, thus contaminating run-off water and making purification more difficult in treatment plants. They also do damage to any land where they are left.

To avoid risk, know these products. Even better, do not use them. If they must be used, use as little as possible. If is a product that is used constantly, buy it in bulk when possible (detergents, shampoos, gels etc.).

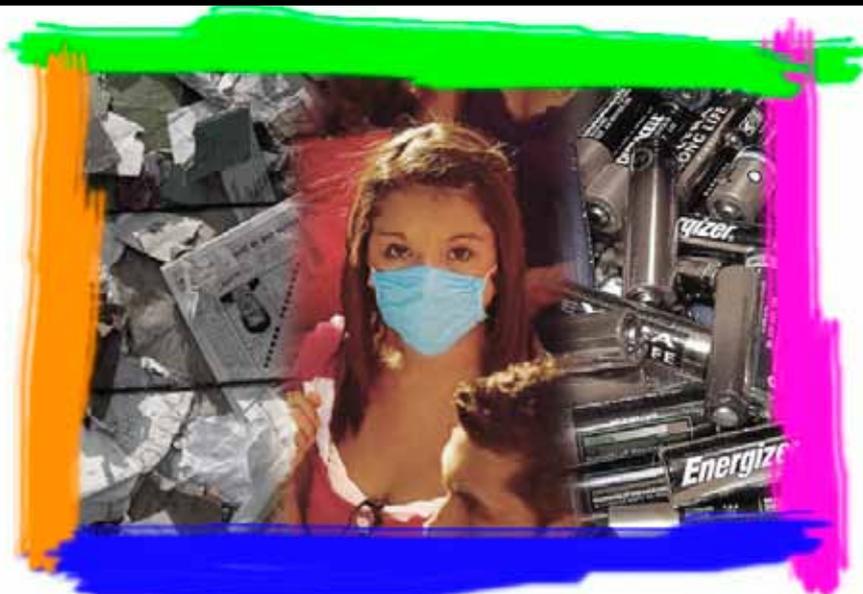
Most paints are produced by the petrochemical industry, and are harmful to health and to the environment. They contain heavy metals and are toxic to breathe in even a long time after application. There are **ecological** paints and they are usually free of solvents. **Natural paints** are ecological and totally derived from vegetable matter.

What Can We Do?

- Avoid using unnecessary toxic substances and substitute natural products when possible. Most rural people of the world can be our teachers in this matter.
- Read labels and note products that carry the symbol for poison.
- Use concentrated products.
- Use only recommended quantities (or less when possible).
- Do not use products containing phosphates, phosphonates or polycarboxylates (they do irreversible damage to aquatic life).
- Shop at stores that carry environmentally friendly products.
- Use natural cosmetics, especially those that are Fair Trade.
- Opt for natural paint, or ecological paint when natural is unavailable.
- Use natural varnish, some made with linseed oil (they can be tinted with pigments or powders that are also natural).
- Clean paintings with solvent made of essence of citrus (orange oil).

For Community Reflection:

- **Reflect on the material presented in this section and make some realistic choices, personal and communal, in regard to paper, batteries and toxic substances. These decisions should be very concrete and put into writing. Alert the person who does purchasing for the household about them.**
- **Review the decisions after six months. Have they worked?**



TRANSPORT

We need to be aware of the human, social and environmental costs associated with getting from place to place in today's world. They include:

- Emission of greenhouse gases into the atmosphere due to use of petroleum and its derivatives (transport is the biggest contributor to the greenhouse effect).
- Respiratory illness, nervous disorders and premature death due to air pollution.
- Environmental impact of highways and high velocity corridors.
- Thousands of deaths each year on highways.
- The impact of airplanes on the ozone layer.

But transport is essential to nearly all of our activities, and to overlook it would be absurd. For this reason we need to look for alternatives and adopt the means of transport which are most sustainable.

A transportation system that is more respectful of our health and of the environment would involve:

- Reducing public investment in high velocity trains, airports and highways in favor of railroad networks and public transport in cities. Railroads, except for high velocity trains, are the safest means of transport, as well as the most efficient and ecological.
- Encouraging the transport of merchandise by rail.
- Making the price of air travel reflect the costs to the environment;
- Planning cities in such a way as to decrease dependence on cars;
- Promoting bicycle lanes in cities, along with pedestrian zones.

What Can We Do?

- Use public transportation as much as possible. It will help avoid parking problems, save money and contribute to diminishing pollution.
- Do not use the car when unnecessary.
- Use a bicycle or walk around town more often for trips that are not very long. It is good for health and for the pocketbook.
- Ride-share as much as possible, for work, vacations, etc.
- Buy cars that are more fuel efficient.
- Do not exceed 100 km/h (55 mph) on the highway; it will save gas.
- Shop close to home, where it is not necessary to use a car.
- Choose the train for trips outside the city, especially longer ones.
- Support groups and campaigns that pressure government improve and promote public transportation.

For Community Reflection:

- **Discuss the use of cars in the fraternity. Do we really need all of them?**
- **When buying a car, do we look for the most efficient models?**
- **Are there situations when we might avoid use of a car and use public transport instead?**
- **Do we promote public transportation in our city? Are there groups that try to pressure the government in this area?**
- **Make concrete decisions in this area.**



FOOD

Food production is becoming increasingly aggressive. We see that:

- The Amazon forest is being destroyed by burning in order to cultivate, among other things, soy beans which are considered a cheaper way to raise cattle.
- Intensive agriculture uses pesticides and chemical fertilizers that poison fields and water, and leave residue in the food crops.
- Raising cattle seems more like a factory process where the animals are treated like items on an assembly line.
- Industrial fishing fleets are destroying the bottom of the sea.
- Many scientists question the use of transgenic, or genetically modified, food.¹ They point to its negative impact on the environment and on agriculture due to excessive use of toxins, contamination of nearby crops and loss of biodiversity. They also feel that GMF can be harmful to human health: produce is becoming more and more toxic and allergic reactions to food are increasing; using antibiotic resistant genes can cause antibiotic resistance in the normal intestinal bacterial flora; viral promoter sequences can lead to multiplication of viruses in human beings. The PRINCIPLE OF CAUTION suggests not using these modifications in food production until there is scientific certitude that they are not prejudicial to human health or to the environment.
- Fast food, industrialized baked goods and prepared foods all mean that many chemical additives end up on our plate: food coloring, preservatives, taste enhancers, stabilizers. They are useful for the food industry, but can be dangerous to our health.

What Can We Do?

- What we eat influences our health in the short run and in the long run. It is good to eat less sweets, meats and fats, and more grains, legumes, fruits and greens. Avoid junk food (have you considered the true meaning of that phrase?).
- Eat fresh foods that are produced close to where you live, cutting down on transport and pollution.
- Buy fish caught in sustainable ways.
- Natural food is safer for people and the planet. Its use promotes development of small and medium sized farming and herding enterprises which are less harmful to the environment. They also help to sustain rural communities.
- Do not waste food. This is a simple way to make the most of natural resources.
- Get accustomed to reading labels in order to avoid food that is genetically modified.

For Community Reflection:

- **Is there something about our use of food that needs to improve?**
- **Do we provide clear information on this topic to our cooks and to those who do the shopping?**



¹ Genetically modified organisms (GMOs) are living beings into which a gene (which would not naturally be a part of these organisms) from a distinct species is introduced by artificial means. GMOs are produced in plants, animals and microorganisms.

FAIR TRADE

The rules for world trade, set by rich countries and multinational companies, marginalize millions of campesino families and small producers in Africa, Latin America and Asia, and condemn them to poverty.

The Fair Trade Movement was born in the 1960s at a conference sponsored by the United Nations. Its theme was *Trade not Aid*. The style of trade promoted by this movement facilitates access of producers from the South to markets of the North. It guarantees payment of a fair price for the goods, and conditions of equity and solidarity for workers.

Criteria For Fair Trade:

- Just wages.
- A percentage of profits are reserved by producers for costs related to health care, education, worker training, etc.
- Establishment of long term relationships with producers who receive an advance on payment, facilitating planning.
- Elimination of child labor.
- Promotion of:
 - Participatory decision making
 - Gender equality
 - Environmental protection.

Who Produces Fair Trade Goods?

They are produced by families, cooperatives, handicapped people and women's groups which are found in the most impoverished areas of Africa, Latin America and Asia. By being part of a fair trade system these people are able to live with a dignity that they derive from their work.

Who Imports Fair Trade Goods?

Importers buy the articles from producers and provide them to stores. Producers guarantee that Fair Trade criteria are met.

Besides selling the products, Fair Trade stores also promote activities to help raise awareness and disseminate information about these issues, and help to organize pressure groups that seek changes in the rules of international trade.

Examples of Fair Trade products are:

- Chocolate, cookies, honey, soft drinks, coffee, tea, sugar, marmalades, rice, pasta....
- Clothing, purses, backpacks....
- Soccer balls, table games, toys, costume jewelry, stationery products, articles for the home...
- Natural cosmetics.

What Can We Do?

- By choosing Fair Trade items we add an ethical component to our purchasing and promote a model of production and trade that is at the service of people.
- Fair Trade products can be a bit more expensive, but allow us to practice solidarity and justice. We are accustomed to giving free will gifts to promote projects in the developing world. The little bit extra we pay for these products is a kind of free will offering to promote the peoples of the developing world. It is our contribution to justice in international trade.
- Look for products that carry the FAIRTRADE seal; it certifies that the product meets Fair Trade criteria, and allows you to look for these products in the places where you usually shop.
- Promote Fair Trade activities in schools and parishes: urge them to organize a talk, a course, a booth with Fair Trade articles...
- Besides buying Fair Trade products for ourselves, we can pass this information on to family and friends, and encourage them to buy Fair Trade products.

For Community Reflection:

- How well informed are you on Fair Trade issues?
- Organizations that promote Fair Trade exist in many countries, and Fair Trade stores exist in many cities. Are you aware of any of them?
- If the community is not aware of Fair Trade, appoint one of the friars to gather information (perhaps from the JPIC Animator or Committee). Organize an ongoing formation session for the community on this theme.
- What products for personal or communal use can be purchased at Fair Trade stores? Make some concrete decisions.



LITURGY AND PRAYER

Care of creation is not a secondary commitment in the life and mission of the Church. It is an integral part of our collaboration with God to ensure that humanity and all creation has life in abundance. All creatures, not just human beings, are called to salvation in Jesus Christ. (cf. Jn 1,1-3; Col 1,15-20; Heb 1,3; and 2 Pet, 3,3-13).

Nature is a result of the creative action of God and is the home in which we live and move. God created the world in such a way that it is inextricably tied to human life. And God has made humanity responsible for all the world, giving men and women the task of promoting the harmony and development of creation with love and concern (cf. Gn 1, 26-30; 2, 15). Thus human well-being is indissolubly linked with that of the environment.

Liturgy is at the center of the life of the Christian community. Through it we are immersed in a communal process that changes us as we enter into correct relationship with God, with ourselves, with others and with nature. Liturgy is an important space where we articulate our beliefs and fundamental values. Worship helps form the conscience of believers. Because of this our faith in God the Creator, our love for God's creation and our commitment to care for God's creation should be an integral part of our liturgical life and experience. Faith in "God the almighty, creator of heaven and earth," is the first article of our creed.

To a great extent, the rhythm of nature accounts for the stages of the liturgical year, and the succession of Christian feasts is rooted in the seasons of the year. Nature is read symbolically in the Church and natural things assume special significance in the communication of salvation through the sacraments (water, light, darkness, bread, wine, oil). There are many references to nature in the psalms, the parables of Jesus, the hymns of the Church and the Eucharistic Prayers. Despite this extensive tradition, however, expressing our faith in God as Creator and source of life somehow remains only implicit and hidden in the liturgical celebrations of the Church.

In these moments of crisis and growing ecological consciousness, it is important that the Church in general and our fraternities in particular adopt a clearer expression of our faith in God the Creator. Franciscan spirituality helps us in this task. We can recover the elements of nature that already exist in the liturgy, but we can also find a way to set aside a specific period of time in the course of the year to reflect on God as Creator, and on the gift of life. The Church in Europe has been doing this for some years, setting aside the time from September 1st (a day to celebrate and promote care for creation) to the second Sunday of October (including the feast of Saint Francis) for this purpose.

What Can We Do?

1. Use certain moments in the liturgical calendar to highlight aspects of Creation:

- **Christmas:** it is a time of heightened consumerism and it produces much waste. Our fraternities and parish communities might reflect on how to have a more ecological Christmas. For example, do we need trees for decoration? And if we do, can we re-plant or recycle them?
- **Lent:** we are accustomed to hear that our Lenten conversion calls for a turn toward the practice of justice, but we hear little about a conversion toward ecology. Pope John Paul II, however, spoke on various occasions of the need for an "ecological conversion."¹ Perhaps during Lent our fraternities could study some ecological problems. We could have a prayer meeting on these themes and ask ourselves what kind of conversion the Lord is asking of us. Some topics might be: global warming; water; energy sources; waste; genetically modified foods; ecology in our daily life; responsible consumption. Another possibility during Lent or Easter is a prayer gathering in which the 'tree of the cross' is presented adorned with plants and vegetation to show how the death of Jesus renews all of creation.

1 Cf. http://www.vatican.va/holy_father/john_paul_ii/audiences/2001/documents/hf_jp-ii_aud_20010117_en.html and http://www.vatican.va/holy_father/john_paul_ii/angelus/2002/documents/hf_jp-ii_ang_20021110_en.html.

- **Blessing of Animals:** many countries have the tradition of blessing animals. It originated as a rural tradition but is continued in the cities with the blessing of pets, seeing-eye dogs, police horses, etc. Such a blessing, organized with appropriate readings and prayers, can be a great opportunity for evangelization.
 - **Feast of Saint Francis:** consider highlighting the relationship of Francis and creatures. Around the time of the feast, plan educational activities in schools and catechism classes, as well as prayer gatherings on the topic of creation.
 - **The "Time of Creation":** celebrate the "Day for Care of Creation" on September 1st, and plan related activities up until the feast of Saint Francis. These can include conferences, prayers and various ecological activities.
2. **Celebrate international days** like World Water Day (March 22), Mother Earth Day (April 22), and World Environment Day (June 5). Plan educational activities, catechetical programs, prayers and other projects.
 3. Include appropriate petitions in liturgies throughout the year, e.g., asking for pardon for the evil done to the environment; praying for the proper care of Creation; offering thanksgiving for the gift of creation and for the fruits it provides. Use songs and hymns that celebrate Creation and promote its care. Include the theme of creation in homilies.
 4. Other ideas to consider:
 - Decorate the entrance of the church or school with posters of the "Canticle of the Creatures." They will be reminders of our love for and commitment to Creation. Create other appropriate posters using sayings like: "All creation praise the Lord" or "The whole earth is filled with the glory of God."
 - Use potted plants in church instead of cut flowers or plastic flowers.
 - Use recycled paper for all printed material.
 - Put containers to recycle paper, bottles, etc. at all exits.

For Community Reflection:

At a community meeting discuss that which is already being done in regard making Care for Creation part of our liturgical life. Make concrete decisions about how this theme can become more evident in liturgy, prayer and pastoral ministry.



Resources

Environmental Audit

The Benedictines in North and South America published an environmental audit. It is available in:

English - [http://www.arcworld.org/downloads/Listening%20to%20the%20Earth%20\(English\).pdf](http://www.arcworld.org/downloads/Listening%20to%20the%20Earth%20(English).pdf)

Spanish - <http://www.arcworld.org/downloads/Escuchar%20a%20la%20Tierra.pdf>

Portuguese - <http://www.arcworld.org/downloads/Ouvindo%20o%20Planeta%20Terra.pdf>

Spirituality of Creation in Liturgy

- <http://www.ecen.org/cms/index.php?page=liturgy>
- <http://www.ecen.org/cms/uploads/lettheearthbeglad.pdf>
- <http://www.ecocongregation.org/>
- <http://www.seasonofcreation.com/>