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WATER AND LIFE: THE WOMEN'S TRADITIONAL KNOWLEDGE IN THE "SASSI" OF MATERA, ITALY

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According to the legend Alexander the Great brought to light an emerald tablet nearby the tomb of Hermes Trismegistus. Medieval alchemists considered the mysterious words impressed on the tablet as revealing the most important secret of the universe, the essence that is the origin of everything:

'Its father is the Sun, its mother is the Moon, the Wind carries it in its lap, and the Earth nourishes it. It generates all wonders of the universe. Its power is perfect. It gently separates land from fire and what is thin from what is dense. It slowly ascends from the earth to the skies and comes down to earth again by collecting in itself the strength of superior and inferior things'.

Water is today undoubtedly the most widespread and strangest element on the planet and although it is so widespread, water is enormously precious.

Raised up by the sun's heat, condensed by the cold moonlight and brought by the wind, water falls into the ground and then resumes its ascending cycle. It nourishes the living beings and allows them to generate. The conviction of a close relationship between humanity, nature and the universe underlies all traditional technical solutions. The water cycle is responsible for the Earth's physical and morphological transformation process, for the development of its forms of life and the harmonious self-regulation system maintaining the conditions for the preservation of the human presence. It is also the metaphor of a way of thinking of nature according to which all elements and beings are linked to each other, a process involving a continuous use of resources without waste, a model of environmental management based on sustainability. It is a cycle of life that modern technology is able to imitate in order to found a new paradigm of coexistence.

So that, the future of the planet depends on our way of using this limited and vulnerable resource. In consideration of this, a great attention has to be drawn on women whose pivotal role in managing and preserving traditional knowledge system cannot be disregarded. As matter of fact, women are a reservoir of really pragmatic traditional knowledge. Recent research confirms a good attitude of women in managing social, cultural and ethical aspects of science and technology.

Women, with their key role in village societies, have been responsible for providing food and satisfying nutritional needs of their families, and therefore possess a detailed awareness of the species and the surrounding ecosystems. In traditional agriculture, women are involved in almost all aspects of farming, from seed selection and planting, to harvesting and storing grain. They are also the local educators, passing on traditional knowledge and practices. In many cultures, women have strongly influenced the development of the techniques and designs for textiles, clothing, and other valuable forms of traditional cultural expression.

WATER: SIGNS AND MEANINGS

For instance, in oasis culture water is the life blood shared by the families: for this reason the jewel that is the symbol of fertility worn by Berber women around their necks features the stylisation in different shapes of the water distribution system. The Egyptian hieroglyphic *mes* that means 'to born' has the same shape, which confirms the very close connection between the oasis culture and the most ancient civilizations of the desert. The same drawing is reproduced on the pattern of the carpets, in women's hairstyles or it is tattooed on women's skin. The hairstyle marks the different phases of the women's growth closely linked to the agricultural practices and to the genesis of the oasis. At birth, the women's hairless head represents the original cosmic space. During childhood, girls have their heads shaven except for a single lock that is left in the middle of the head; the lock symbolizes the primordial land. During puberty, only a narrow shaved strip surrounds the hair growing in the middle of the head: it represents the salted and sterile ocean surrounding the land which is fertile but still untillied. As time passes, women keep their hair shaved around the circumference of the head, while the hair growing in the middle of the head is divided into locks by a median line reproducing the

central canal of the irrigation systems. When a girl is ready for marriage her hair, no longer shaved off, is divided into lines and thin tresses, representing the tilled land where the water flows through the irrigation canals. Married women gather their long hair in thick tresses: woman is now as fertile as the oasis.

The correspondence between the ego and the world establishes a pact between culture and nature. In the oasis the constant relationship between the microcosm and the macrocosm is not a metaphysical conceit but rather an ethical principle based on precise material needs.

Broadly speaking, women are responsible for providing the basic needs of their families such as water, fuel, child education and basic health care all of which are necessary to the well-being of the family. The close association between women and natural resources exists because of their social and economic roles.

THE TRADITIONAL SOCIETY OF THE SASSI OF MATERA

In the traditional society of the Sassi of Matera, located in the plateau of the Murgia, where the livelihood of people largely depended on the skilful management of its natural resources and their sustainable utilization women played a crucial role.

The Sassi of Matera and similar settlements found in the plateau of the Murgia extending up to the town of Taranto are a prime example of how archaic societies lived and managed resources in the karst areas of Lucania, Apulia and Sicily regions. The towns were built on the edge of deep gorges, the *gravine*, having a highly irregular water flow. But inhabitants are settled along the highland and the steep slopes rather than at the bottom of the canyon, as one would expect if it were the real water resource. In the event, water from the sky, rain and dew, harvested in the drainage devices and the caves, is the resource of these maze-like troglodyte complexes typical of the Sassi of Matera as well as of the other stone towns of the *gravine*. They are the synthesis of the organization of space carried out by the different socio-cultural groups that have inhabited these areas. The hunter-gatherers left evidence of their presence in the natural caves that open in the hardest rock of the *Gravine*. During the Neolithic age the limestone highland was populated as is testified by the presence of a large number of villages bound by ditches. During the Age of Metals, the agro-pastoralists did not come into conflict with the previous Neolithic settlement because they settled on the slope. Therefore, there is the physical synthesis of different cultures and of three geographic environments: the plain, the slope and the caves. By developing the original prehistoric techniques an adapted system of built-up area is created in the Sassi of Matera, a stone oasis that enables to inhabit a sterile and arid area by combining the different principles of water production. The traditional use of space to build houses saves the argillaceous hills upstream of the canyon which are left to woods and orchards. The water absorbed during the rainfall, which naturally pours down the *gravina*, also comes from these hills. This water is impounded on the edges of the *gravina* by sinkholes and dolinas typical of the karstic and limestone areas. These are the so-called *laghi* (lakes) that characterise the toponymy of the Apulian and Lucanian highlands of the Murge. In the Sassi of Matera and in other very similar habitats of the *gravine*, the process of urbanisation started from the lakes on the upper edge of the canyon downwards.

The present situation of the Sassi of Matera is the result of the evolution and the urban saturation of the archaic agro-pastoral structure, and the development of an urban ecosystem. The dolina-lake on the edge of the *gravina* turned into the hypogeal pit courtyard or the well courtyard from which radial tunnels branched out. The family communities had the imposing underground rooms as places to worship their ancestors and as the places for their collective rites. Tufa barrel-vaulted structures were built with the same blocks of limestone dug out from the caves. They are called *lamioni* and represent the outward projection of the underground rooms. The lateral caves were extended forward and closed up in a horseshoe shape round a terraced clearing which created a central protected area. The original irrigated vegetable garden and the threshing-floors became a place for family meetings and for social and community exchanges called *vicinato*. The big collective cistern for harvesting water off the roofs was excavated in the courtyard. The overlapping step becomes a roof garden. The lateral water channels became the stairs and vertical connections of the urban complex. The whole network of small streets and paths was formed by following the canal system.

It is still possible to understand the urban layout of the Sassi of Matera only by starting from the original matrix of the underground spaces, the cisterns and the terraced gardens, making use of the

process of accumulating traditional knowledge and a concentrated use of resources which dates back to prehistory.

A pit-courtyard acts as an impluvium and provides an open-air sunny space, surrounded by walls, which can be used for agricultural work and preparation of food. Some of these courtyards are used for collecting waste and produce humus, and form gardens carved out of the rock. This technique solves the problem of infertile soil and the need to protect plants. Very similar cultivation methods have been found in Petra, in the Jordanian desert.

THE VICINATO

The *vicinato* is not only a spontaneous articulation of cave-dwellings but rather it undertakes precise social and economic values assigned to it by the local culture. The *fogge*, cisterns and pits for grain storage, the tanks and the installations for the wool milling and for the skins treatment, the market and the economic heart of the town were placed inside the numerous *vicinati* dug out along the gravina. A crucial role within this social and psychological organisation is that of woman. She is the angel of the home who takes on her all the problems of cohabitation.

However, besides their social role women had an economic role because of a close association between women and natural resources. As matter of fact, they had the first responsibility for providing her family with the basic needs such as water. The big collective cistern for harvesting water represented quite the only place and moment for social and community exchanges all over the day, the place where the every day occurrences in people's life were narrated and became popular tales to pass on the future generations.

Early in the morning women went out for harvesting water for the household needs, for cooking and drinking, above all for men who worked in the fields until the end of the day. Water was collected and carried on the hand into an earthenware jar, reminding the hypogeal bell-shaped cisterns, which kept water cold all over the day. The use of a container with a narrow aperture and rounded edges that did not allow a single drop of the precious liquid to be wasted is the evidence a parsimonious usage of such a vital natural resource. With the same rituality as in the morning, women went out in the evening to discharge manure in the collectors. That was another time in women's day for meeting people of the *vicinato* and waiting for men coming back from the fields. In this agro-pastoral society women were also involved in all aspects of farming on the roof gardens, from seed selection and planting to water harvesting for breeding the animals. In dry season, the hypogeal rooms within the natural cave-dwellings work during the night as condensers of humidity which condenses in the final hypogeal cistern. The inclination allows sunrays to penetrate down the bottom. While, in summer time sunrays have a higher inclination and hit just only the entrance to the underground rooms which are kept fresh and humid. This technical solution has also a symbolic value: the encounter between the sun, the male element, and the earth, the female element, which generate water, i.e. life.

Another local traditional practice connected to water harvesting was the building of a cistern dug out of the rock to a 5-6 m. of depth for storing snow, which was collected and pressed under layers of straw until it became ice. Therefore, it could be stored and used for food conservation.

When from 1950 to 1960 about 15,000 inhabitants left the ancient centre on the slope and moved in new built-up suburbs on the plain. This expulsion of the population is one of the most recent large urban desertions in history. This operation was possible only thanks to the pressure exerted by the violent cultural shock, due to the impossibility of the traditional habitat of the Sassi of Matera to compete with the building powerfully conducted in the post-war period in Italy, and with the economic and cultural values system of modernity. The industrial revolution had already determined the crisis of the economy of the Sassi which based on the manufacture of the raw materials of the yarns, on the tanneries, on the breeding and on the food agricultural production. Thus, the agro-pastoral society began to decline by causing the abandonment of the drainage practises, of the caves maintenance, and of the water catchments and distribution. In the middle of the 18th century all the *vicinati a pozzo*, the doline and the cisterns on the edge of the gravina were filled with earth and the central square of Matera was built above in the 19th century. During Fascism also the grabiglioni, the natural slight draining torrents of the Sassi, were asphalted and a ring road was built which cut the lower border of the habitat and therefore separated it from the bottom of the ravine. When the inhabitants moved, the ecosystem of the Sassi was then deeply spoilt. The water crisis, the abandonment of the traditional

practices and knowledge, which the community had built the space on, made the Sassi fragile in comparison to the modernity and their desertion was ineluctable.

CONCLUSIONS

The international organisms are beginning to show their awareness of the importance of women's roles in managing and preserving traditional knowledge above all relating to water resources. Their knowledge and expertise in providing and using water are very precious and many problems could be solved by fostering a larger participation of women in water management issues such as the pointing out of water sources for local providing, the positioning of wells or the planning of a pump.

Furthermore, thanks to their environmental skilfulness women are the best educators for passing on environmental education to their families and local communities. Thus, the women's involvement in water preservation and management policies would help to change habits and social behaviors relating to health care and sanitation.

Today, the actual risk to avoid is the final loss of that consolidated network of links and relations, signs, values and meanings supported by the social and psychological fabric of *vicinati*.

Local and International communities are tending to protect and enhance traditional knowledge by gathering and exchanging information on natural resource management in the perspective of the dissemination, the reproducibility and a modern re-proposal of the most successful traditional practices, firstly for water management.

Each traditional practice works within a social organization and a shared system of values supporting it and based on it as well. Aesthetic and ethic values complete the interaction between environmental, productive, technological and social aspects. A device for collecting water is never a merely technical structure but it also has its own beauty.

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