# Chapter 12
# Dam Projects and Protest: The Exception of Alqueva (Portugal)

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## 12.1 Dams and Protest

Dams and protest. Very often these two words accompany one another. Technological prowess and political will make the headlines, but above all, when a dam affects housing, the displacement of the population is fiercely denounced. Anti-dam sentiment is widespread and often vehement. Recently, the projects that have attracted the most attention are those of the Three Gorges in China, Narmada in India, Belo Monte in Brazil, and the Tigrus and Euphrates in Turkey. Pamphlets, condemnations, and requiems flow from the pens of essayists, intellectuals, local scholars, and spokespeople and former inhabitants of drowned villages. Arundhati Roy in India is one of the most emblematic figures (Roy 1999), like Patrick McCully in the United States (McCully 1996).

In France the post-war Tignes Dam is a prime example of the misunderstandings between decision makers and inhabitants and of demands that turn into resentment and bitterness. The dam was part of a program to "modernize France and democratize the consumption of electricity" (Varaschin 2001). Authorities ensured that the flooded, former pastoral village was reborn as an upmarket ski resort, yet Tignes ritually maintains the tragic history of the drowning of the village and the dispersion of its population. In 2000, on the occasion of the emptying of the reservoir, which happens every 10 years, villagers marched in a procession organized on the remains of the village, smoothed over by water and mud. At the foot of the bell tower, now lying on its side, priests carried out baptisms and a confident grandfather declared to his 8-month-old grandson: "You have been baptized here on the earth of Tignes, my

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grandson, and in 20 years, when the EDF[1] concession expires, you will take back our drowned past for us."[2] Hope and sorrow are still handed down through the generations, and with indignation.

These situations are not exceptional. *Big Dams and Inhabitants* (Blanc and Bonin 2008), which examined "the relevance of these huge facilities in the light of the new issues of sustainable development," described other instances of resistance combined with resilience: "Whenever these reservoirs are emptied, it gives rise to veritable pilgrimages by former inhabitants of the valleys, their children, and the engineers and workers involved in building the dams" (Faure 2008, p. 103). Fighting the construction of the dam at Saint-Jean du Gard in the Cévennes in southern France, the tough green/localist resistance and the power games in the protest movement mobilized all strata of the population (Clavairolle 2008).

But these large dams also have their champions (Lacoste 2001; Ayeb 2001), who emphasize the cleanliness of hydraulic energy compared with nuclear power, now that we have entered the age of sustainability. On a worldwide scale, however, the number and intensity of conflicts provoked by big dams are increasing as is the number of projects awaiting construction (Bethemont 2008, p. 32). As a result, methods have been proposed to better evaluate and forestall the risks linked to population displacements (Cernea 2008).

The case of the Alqueva Dam in southeast Portugal lies in a particularly interesting theoretical interval: it simultaneously is an heir to the civilizing traditions of state development through access to water, a forerunner of the application of measures of public consultation and participation of the mid-1990s, and one of the most modern constructions for the storage and management of water in the early twenty-first century.

### *12.1.1 Protest on the Iberian Peninsula*

Spain is no exception to the pronounced trend of protest. It is home to the third largest number of dams in the world, and resistance to dams and diversions there is well organized. Studies on the Ebro basin highlight the many localist, regional, and heritage-related reasons (Clarimont 1999). Associations like the Platform for the Defence of the Ebro, the Coordination of People Affected by Large Dams and Diversions (COAGRET), or the Foundation for a New Water Culture remain alert to any new constructions. The most recent protest movements have concerned the dams of Yesa, Itoiz, Biscarrués-Mallos de Riglos, and Sanliestra. At Riaño, in 1987, the submersion of seven villages provoked strong resistance. In vain, villagers and ecologists climbed onto the roofs of houses to stop the construction from advancing (Canal Sanchez-Pagin 1988).

[1] Électricité de France S.A., the French national electricity company.

[2] Personal communication, Tignes 2000.

The protest movement in Portugal is equally strong. Like the Tignes in France, the Vilarinho das Furnas Dam was pushed through in 1974 in the name of modernization. It required the dismantling of a community and has left deep scars and bitterness at a national level. The displaced inhabitants left with the doors, windows, beams, and tiles of their houses, planning to rebuild elsewhere. Every year, a religious procession is held around the reservoir.

Today, the national social and socioeconomic context has changed and so have the modes of protest. On Portugal's Minho River, the building of the Sela Dam was the subject of organized local resistance for more than 12 years, beginning in 1996. The mayor was deeply involved and was prepared to support the dam if sufficient compensation was forthcoming for the valley. But when no agreement was reached, opposition mounted. The government has shelved but not abandoned the project (Wateau 1999, 2002). In 1997 archaeologists on the Côa River succeeded in preventing the submersion of prehistoric rock art by mobilizing the international scientific community (Gonçalves 2001). And Sabor, envisaged as an alternative to the Côa Dam, continues to attract the attention of ecologists. In 2006, a committee evaluating the environmental impact gave a verdict of "nim": neither yes (sim) nor no (não).

### *12.1.2 The Necessary Ingredients for Protest*

A comparative study of the different stages in these protests, systematically gathering and classifying all the news articles about them, by theme and by dam, brings to light an interesting fact: there is a standard method of fighting dam projects. Françoise Clavairolle, in a rigorous analysis of the arguments used by opponents of the Saint-Jean du Gard Dam, identified four categories: ecological, socioeconomic, technical, and symbolic. These categories very often are discovered and put forth over the course of the fight, strengthening the substance of the opposition.

More precisely, the ecosystem is always altered, changing the water temperature and endangering or destroying migrations, fish habitats, or rare and fragile fauna and flora. In one place it is beavers, gray herons, orchids, and cyclamens (Clavairolle 2008), while in another it is lampreys, salmon, shad, or a noble variety of grapevine (Wateau 1999). The opposition also regularly evokes the fear of mosquitoes or of the mist that will affect the climate and damage crops important to the local economy.

The socioeconomic arguments essentially concern local crop production. In the Cévennes in France, for example, it was feared the dam would destroy the fragile new economic and social structure that has grown up around local products. Those against the construction of a dam also tend to question its projected profitability: Will the benefits really outweigh the costs? And if so, for whom? For the urban centers at the expense of the margins? Arguments against the technical efficacy of the project often concern the location of the site, maintaining, for instance, that the

bedrock is not solid enough to support the infrastructure or, even worse, that the pressure of a huge mass of water over the fault line could trigger a catastrophic earthquake.

Finally, localist, symbolic, or heritage-related arguments lend further support to the protest, based on the history of a valley, its architectural heritage, or the territorial role it plays. Thus, in the Gard in France, it is the identity of the Cévenols, the famous resistant Protestants, that is directly attacked. In the Ebro valley in Spain, it is the water culture of Aragon. In Minho, it is the medieval fisheries, and in Cantabria, Spain, it is a dozen churches, as well as buildings with coats of arms and mozarabic stones.

All of the necessary ingredients for protest appeared to be present in Alqueva in southeast Portugal (Fig. 12.1). Now the largest reservoir in Europe, it boasts a surface area of 250 square kilometers ($km^2$) and a volume of 4,115 cubic hectometers ($hm^3$) of water. There were sound ecological arguments, with bats, black cranes, freshwater turtles, and narcissi imperatively requiring protection. There were a number of cave paintings and important megalithic ruins. There were also serious risks of provoking an earthquake, because the reservoir exerts pressure on the fault line responsible for destroying Lisbon in 1755. The opposition voiced grave suspicions about the economic interest of this huge undertaking, with its constantly changing objectives and irrigated products that would have to be sold on saturated markets. Mist and water loss presented certain risks. Beneath all of the arguments flowed a complicated social context, in which the land could no longer support rural workers. So why did no substantial opposition to this project emerge? Or at least, why were the objections insufficient to prevent the construction of this dam?

## 12.2 Alqueva and Its History

Straddling the Guadiana, a cross-border river that originates in Spain, Alqueva was envisaged in the 1920s and completed in 2002. Francisco Franco and Antonio de Oliveira Salazar, dictators of Spain and Portugal, respectively, signed the agreement to build the dam in 1968 and work started in the 1970s, although it was subsequently interrupted several times. The completion of the project essentially was assured in 1997, when the European Union agreed, with some reluctance, to meet two-thirds of the total cost (Fig. 12.2).

Originally, the dam was to be used to irrigate the vast Alentejo plain, worked intensively during the years of the Salazar dictatorship for the dry farming of cereals. The arid lands of Alentejo, which still belong to large landowners despite successive waves of land reform introduced in the 1970s and 1980s, are essentially destined for mixed farming. Estates, generally covering more than 1,000 ha, are dedicated to cereals, stock-breeding, pasture, private hunting and, depending on the location, cork oaks, olive trees, vineyards, or irrigated melons. The owners of these estates, or latifundia, are not farmers themselves; they are more likely to be

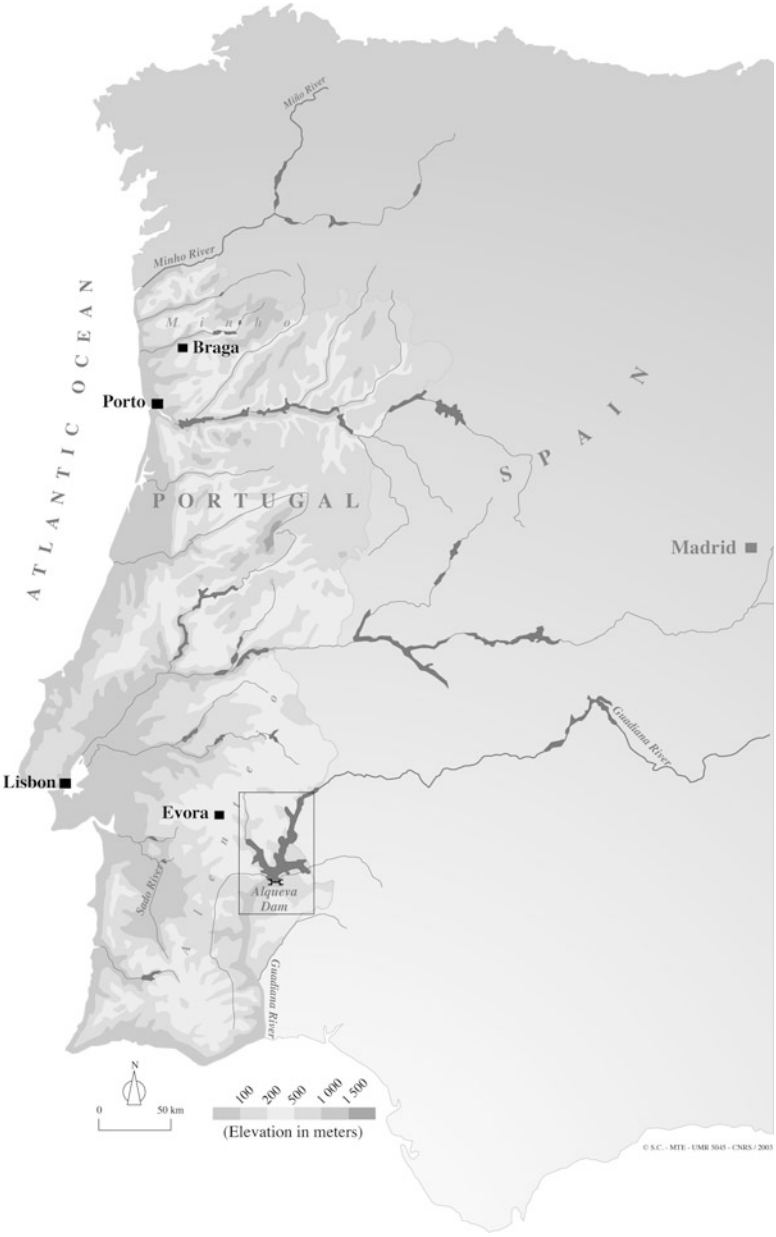


**Fig. 12.1** Map of Portugal and the Alqueva Dam

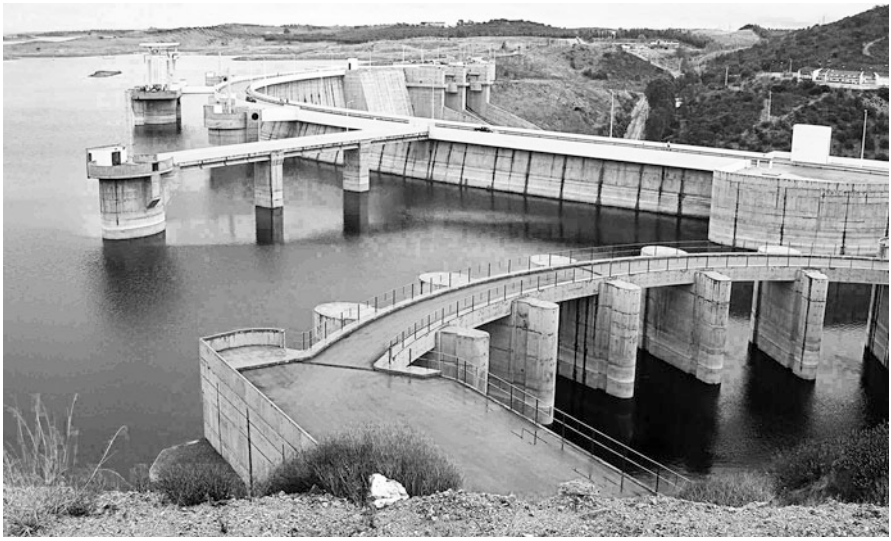

**Fig. 12.2** The Alqueva Dam (Source: Author)

doctors, lawyers, engineers, or academics who, having inherited these estates, often rent them out wholly or partially. Irrigating the Alentejo plain was intended to intensify production and, at the same time, allow more people to work and live off these lands.

The myth of water as both a civilizing force and the means by which everyone can reap the benefits of an irrigated plot of land was promulgated by those in support of the dam (Drain 1996). Sometimes compared to the Minho, one of the greenest regions of Portugal and farmed by small landholders, the Alentejo plain irrigated by Alqueva was touted as the second paradise of Portugal. The various proposed purposes of the dam—supplying water to the city of Sines (a project since abandoned), electric generation, drainage, and the distribution of water to houses—remained very subordinate to the irrigation of the Alentejo plain. Today, 124,000 ha of irrigated land are still planned, but farming almost certainly will not be the primary purpose of Alqueva in 20 years. Some promoters are studying the optimization of the tourist potential of the reservoir, because tourism could offer better prospects of economic profitability.

### *12.2.1 The Black Book of Alqueva*

Three books published in the 1980s expressed different reactions to the projected building of the dam. The first denounced the megalomania of the undertaking and proposed alternatives. The two others were firmly in favor of the infrastructure,

advancing all possible arguments for its construction. But none of them, not even the *Black Book of Alqueva*, totally condemned the project.

In the *Black Book of Alqueva* (1981),[3] published by the Monarchist People's Party, specialists from different disciplines expressed their doubts about the suitability of the dam, point by point: the project was based on miscalculations of the water flows in the Guadiana River; it was an agreement whereby Spain had few obligations in the event of a water shortage; it represented a failure to explore alternatives; the hydroelectric production did not justify the size of the infrastructure; the site (Sines) had no need of Alqueva; and it was located in a highly dangerous seismic zone. But the most criticized aspects were the exaggerated size and cost of the dam and the policy of supply. In this respect, the project was denounced as "an invitation to centralism, concentrationism, monoculture, industrial irrigation, a process that only increases the use of chemical fertilizers, the consumption of fossil fuels and imported machinery" (p. 52). Even if, as the authors declared, "we are not against the project to irrigate the Alentejo, ... we consider that the best solution lies in the construction of small and medium-size dams covering a wider area" (p. 37).

Some 25 years later, now that the Alqueva has been built, it is easier to appreciate the extent to which these fears were well founded: there is a trend towards intensive monoculture in the olive plantations of the Ferreira do Alentejo region, with drip irrigation and fertilizers; land ownership is becoming more concentrated, often passing into the hands of the Spanish; and the production of electricity is only the fifth largest in the country. In addition, the seismic risks were taken very seriously, and millions of tons of concrete were poured onto the fault. On the other hand, Spain has signed an agreement concerning the minimum flow of the river, and the question of quantity appears to be settled. The question of water quality, however, remains. This problem had not been envisaged at the time, and yet hardly 5 years after the dam was filled, the water of Alqueva already was largely contaminated.

The second book was a response to the first. Published in 1982, *Alqueva the Great Dam* is a collection of articles by the left-wing journalist Antunes da Silva criticizing the right-wing government in power, notably for "fearing that Alqueva will give an abundance of water and light to lands inhabited by people who did not vote for it[4] and, for that reason, it punishes them relentlessly (p. 11). [...] the water will irrigate new lands [...], satisfy the thirst of inland towns and villages, come to the rescue of existing or future industries, and that is how Alentejo could become an Eldorado [...]" (p. 18).

The myth of water is very present in those lines. And yet today, contrary to the hopes expressed, ordinary people have derived little benefit from this new water. Only the richest landowners have been able to make the investments needed to irrigate their land. At the moment, it is essentially Spanish entrepreneurs who are

[3] *Barragem de Alqueva, Livro Negro*.

[4] The region was a stronghold of the Communist Party.

buying up and modernizing estates of more than 900 ha. The water also is reserved for luxury tourism, with five-star hotels and golf courses sprouting up around the dam.

The third book, *Pursuing Alqueva for the Development of Alentejo and of the Country*,[5] published in 1985, brought together all the defenders of the Alentejo region (mayors, unions, technicians, and scientists) in favor of the dam and against the government in power: "[. . .] once again, the Alqueva project is absolutely necessary to the development of Alentejo and of the country. [. . .] The present position of blockage is unacceptable, condemning a whole region to desertification, despite the potential that exists there—in the form of water—which [. . .] should constitute the vector central to its social and economic development, instead of which it continues to flow, with no benefit, into the sea." Once again, the salvation of Alentejo by water is the driving concept.

### *12.2.2 Ecologists, Intellectuals, and Politicians*

In the 1990s, Portuguese and Spanish ecologists fought the Alqueva project. But their aim was never to prevent its construction, simply to limit its impact on the environment. In particular, resistance crystallized around the 139 m-mark above sea level, a maximum level for the reservoir that would have reduced the number of trees lost to the project. But the maximum level of 152 m above sea level that had initially been planned was maintained, despite 2 years of firm and regular protest. More than one million trees were cut down to prepare the way for the 25,000 ha of water. Certain olive trees, hundreds of years old and the focus of wide media attention, were carefully dug up and ceremoniously replanted in different parts of the country. The bats were moved to new caves. The right to call for the protection of the cave paintings, most of which were on the Spanish side of the lake, fell to the municipality of Cheles, which took no action.

Portuguese intellectuals raised no opposition to the Alqueva Dam. Was the project already too old, too polemical, or too political? Or did they prefer to believe, rather ingenuously, that it could only benefit the country? The answer is unclear. What is certain is that no academics, writers, or artists of note were involved in the opposition. No local scholar or protest association ever clearly condemned the project. And yet radical positions already had been adopted in Portugal, for example in Vilarinho das Furnas, where Portuguese writer Miguel Torga strongly contested the decision in the media. But in Alqueva, nobody appeared to believe the costs outweighed the benefits.

Associated with a promise that had to be kept, an impressive and majestic construction that showcased national technological skills, and the prestige and pride of a nation, Alqueva was used by all the successive governments, both left

[5] *Prosseguir Alqueva para Desenvolver o Alentejo e o País.*

and right. Today, it is the largest reservoir in Europe, and it will almost certainly remain so ad vitam aeternam, because it no longer corresponds to any relevant reality on an environmental level. Alqueva was obsolete before it was built.

## 12.3 Alqueva and Policies of Public Participation

Beyond the historical, social, and economic dimensions of the project, the construction of the dam took place at the very moment when policies of public participation[6] were reactivated at the Rio Forum of 1992, whose directives were to be applied to every big construction project. The Alqueva project had both financial means (European funding was no longer restricted) and intellectual means (all the traumatic histories of dams had been analyzed). Particular attention was paid to Luz, the only village of slightly more than 400 inhabitants that was flooded by the Alqueva reservoir.

The process of resettling the population of Luz was experimental in Europe and today can be qualified as satisfactory, technically speaking. It entailed replicating the village and, during the difficult stages of moving—including relocating the cemetery—pairing villagers with a team of psychologists (Wateau 2008). The company building the dam, the Company of Development of the Alqueva Infrastructures (EDIA), set up a permanent team of four experts in the village, including a sociologist, agricultural engineer, historian, and architect. The systematic reproduction of the houses began in 1996. The new village, about 2 miles from the old site, was completed in 1999, and the villagers started to acclimate to the idea of moving. Up until 2002, the year the cemetery and then the village population was relocated, the team of experts interacted with the inhabitants every day, listening to them and reassuring them. The team remained in place and in contact with the population for 5 years after the move, during the period corresponding to the guarantee on the replacement of private houses and public buildings (Fig. 12.3).

In terms of participation, it appears that lessons had been drawn and directives were applied. Permanent consultation with the villagers was established. People were able to express their discontent and come to agreements, or even modify infrastructure that had already been built and paid for, including church benches, house chimneys, and marble window frames. In newspapers, one could read that "all the hypotheses that had not been advanced at Vilarinho das Furnas were proposed to the inhabitants of Luz. They chose to have a new village, decided on its location [. . .] the houses were built with care [. . .], collective facilities are of good quality [. . .]. And even when the inhabitants of Luz complained, one can only hear [in their complaints] the voice of Vilarinho das Furnas which echoes that of

[6] As defined by Sophie Allain (2001).

**Fig. 12.3** The new village of Luz (Source: Author)

Luz. The work accomplished at Alqueva does not extinguish the crime of Vilarinho. Alentejo exhibits the injury of its brothers in the north."[7]

The situation appeared to be perfectly under control, and yet, in the village of Luz, nobody wanted to leave their old houses. The absence of organized resistance did not mean the presence of collective consent. Opposition from the villagers was expressed in a diffuse manner throughout the process, with some moments of more obvious exasperation that called into question the constructive effects of public participation: in a petition in 2000, the inhabitants denounced broken promises, lies, and bad faith. Construction of the new village, which had been assembled and dismantled several times due to a lack of overall supervision, increased the total cost of the work and discredited those in charge of the project. The new houses, meant to be identical to those they were replacing, hardly resembled the originals, and the layout of the village as a whole, much more extensive and open than the old one, altered its social character. Despite all of that, the villagers moved without too much fuss, finding the modern comforts provided by the new construction easy to adopt.

The desire to believe, the need to have faith in this huge project, was probably the most effective element in its favor. At a local scale, the villagers complained, but in the end they all received what they had demanded. To borrow an allegory from the Portuguese poet Fernando Pessoa (1989), they hoped that their "untranquility" would procure a better future for their grandchildren. At the regional scale, the hopes for development in this arid, deserted zone were such that the construction was quickly adopted. People are still prepared to wait for the investment to bear fruit, for entrepreneurs to get organized and transform Alentejo into an attractive region providing job opportunities. At the national scale, the promise has been kept and the dam is seen as a strategic reserve of water for the

[7] in *Publico*, May 30, 2004, "O vale das ilusões."

country. And even if water quality is becoming problematic, notably for the luxury tourist developments that were imagined, optimizing Alqueva, creating a demand around the supply, is seen as a solution.

## 12.4 Exploitation and/or Delay?

It is invalid to speak of a delay among the villagers in contesting the project, as some academics theorists have suggested. That reveals an ignorance of the factors that can motivate and mobilize a population. It also reduces to hastily-sketched principles a local situation that is more complex than might at first appear to developers and intellectuals with no direct experience of local daily life. In the village, it was not delay that people feared, but the accusation of exploiting their situation. For months and months, rubberneckers came to visit the village that was going to be drowned. With unparalleled patience, the villagers answered their sometimes sordid questions and sated their curiosity and appetite for the sensational. One Carnival Sunday in 2001, more than 150 cars pulled into the village in 90 minutes. Packed into the narrow streets of the old village, some of the cars managed to offload souvenir hunters. But in Luz, no cap or t-shirt, not even a pot of jam, was sold to the visitors. For the right-wing village mayor under a left-wing government, it was very important that Luz should not be seen as exploiting the situation. The inhabitants of the village, he told the media, are the sacrificed people of Alentejo, not opportunists to be reproached for taking advantage of a social and political history not of their choosing. After all, everyone in the village was against the dam. Or at least, nobody wanted their house to be affected. The visitors, piqued at not finding anything in the way of a souvenir, pillaged the low walls of shale surrounding the fields at the edge of the village. Brandishing a small stone, they could affirm that they had visited the village of Luz before it was submerged beneath the waters.

A comparable ethical position was adopted in relation to protest. A group of Germans came to the village one day intent on helping the inhabitants of Luz organize their protest, explaining they had more experience in dealing with mistreatment by governments. The mayor declined their offer. Thanking them for their concern for Luz, he explained this was the villagers' story, and the visitors' help was not needed. In the face of a moral value, resistance and protest were relegated to a principle rooted in the history of a region in relation to its nation.

## 12.5 Alqueva: An Example for the Future?

So what conclusions can we draw about Alqueva? What role did public participation play? What benefits can this experience provide for the future? First, can we speak of a new departure in the rationale of imposing large infrastructures on a

population? Probably not. Alqueva was built for the good of the country, not so much for irrigation or electricity but to create a strategic water reserve for both domestic and international reasons. Let us recall, however, that Alqueva was decided in the 1950s and 1960s, which tends to diminish the effects of the process as a whole. Was there a new departure in the approach to the project? Yes, without a doubt, because past experience was taken into account. The building of the Alqueva Dam was a direct and symmetrical echo of the drama of Vilarinho das Furnas. And it was in the light of the previous experience, considered a national catastrophe, that the building of the new dam was approached with caution and thoughtfulness.

In terms of compensation, the experimental dimension of Alqueva, with the choice of the identical rebuilding of a village, respecting the social morphology of the old village, was probably the result both of heightened civic awareness and of Portugal's entry into the European Community in 1986. Lastly, was there a new departure in terms of effects? Yes, because between 1953 (Tignes) and 2002 (Alqueva) an irreversible recognition emerged of the existence of the populations, the heritage, and even the landscape destined to be submerged. This constitutes "a development in our conception of social cohesion, principles of collective management, and responsibility in choice and decision-making processes" (Guichard 2003).

And yet, the joint venture responsible for the project does not appear to have invented anything. It did no more than repeat the desiderata expressed by the inhabitants in 1977 and 1978, when the first meetings were held with the villagers. According to the study conducted at the time by the anthropologist Isabel Carvalho, the villagers desired, in order of importance: the transfer of the cemetery before the inhabitants were moved; the building of a new village and church in which the patron saints could be reinstated; proximity to the original site; a new village with all amenities (drains, electricity, schools, pharmacy, doctor); a town hall; a community center; and a house with a garden for everybody (Carvalho 1981).

Put that way, it appeared easier to avoid a challenge. These sacrificed people of Alentejo, so lacking in protest, some might say, nevertheless succeeded in obtaining everything they asked for and then some, in the form of a cable network, a museum, a huge bull ring, and a gymnasium. But the return to oblivion and the lack of economic and tourist activities in the interior of the country are now taking their toll. At the end of September 2008, more than 40 people (10.5 % of the population) had left the village because of lack of employment or lack of houses to build on land that had, nevertheless, been set aside for that purpose. The village is losing its vitality and sociability, the school almost closed, people are having trouble readapting, and apathy is steadily gaining ground.

The great dam of Alqueva has not yet gained international renown. And yet it represents the most modern construction of its kind in Europe, with a carefully monitored reservoir, benefiting from all the latest technology and expertise. Tourism developers are late in coming forward, or perhaps they still fear the construction of factories in Spain and the potential for pollution to spill into the reservoir. In the context of sustainable and globalized water, Alqueva is not conclusive or satisfactory enough as an example to become an effective model of how to build dams in

the future. Alqueva nevertheless represents a new and important step forward in the construction of dams, one in which populations are taken into more thoughtful consideration and carefully rehoused. Despite the limitations mentioned, this essential dimension must clearly be appreciated and developed.

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