The lymphatic filariasis elimination program in Bangladesh: an exportable model?

El programa de eliminación de la filariasis linfática en Bangladesh: ¿un modelo exportable?

Elena Mancini

Abstract

The lymphatic filariasis elimination program in Bangladesh: an exportable model?

In 1971, at the end of the bloodstained separation war with Pakistan, Bangladesh appeared as a country without hope. The intense spopulation growth –one of the highest in the world– natural disasters such as flooding and typhoons, acute and diffuse poverty– with a percentage of population below poverty line of 30% –the internal political scenario, with social instability and underlyin gethnical conflicts– made this situation less likely to improve. 40 years later, Bangladesh succeeded in disproving such prevision, *with a significant growth in economic development, public healthcare and social conditions. Birth control, countermeasures* against "big killers" such as (TBC)[1] tuberculosis and diarrhea in babies, improvement of hygienic conditions and the implementation of local emergency units (community-clinic), effective sanitary campaigns and prevention of endemic diseases have been accomplished

National Council for Research Biomedial Technologies Institute (UOS of Rome).
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thanks to the coordinated use of sanitary measures in international programs. Results obtained through a sanitary policy based on fruitful collaborations among the Ministry of Health and Family Welfare, NGOs, international health organizations, international institutions and foundations. This way Bangladesh achieved the result of an almost total elimination of neglected endemic disease in the country (visceral leishmaniosis, lymphatic filariasis, dengue, plague, and intestinal parasitizes helminth infections). The article analyses the factors contributing to the success of the Lymphatic Filariasis Elimination Program. The study of such factors permitted to identify a governance model for fighting neglected diseases in endemic regions with similar geo-political environments.

Keywords: lymphatic filariasis, Bangladesh, community based approach, capability approach, equity, Alma Ata Declaration.

1. Introduction

Bangladesh has provoked an increasing interest by economists, and by the experts on health policies, in as much as, being a country until few years ago extremely poor, an still very poor, has been capable to achieve very important results in the health field, and to accomplish a remarkable social transformation. In fact, jointly with a slow but constant economic growth –with positive effects in life conditions, even though not yet in all the population sections– has achieved remarkable results in the sanitary assistance area, and in schooling, up to the point to nearly reach the key objectives of the *Millennium Development Goals* [1, p. 1734]. It has been observed, for example, how the country now "enjoys a greater life expectancy, the lowest rate of fertility and infant mortality among the South Asian countries, notwithstanding that the health expense as a whole, be lesser than their surrounding countries" [2, p. 1531].

An ulterior and remarkable success is represented, by the almost complete elimination of the endemic tropical diseases, through a

national program, which has been developed taking advantage of the well-known presence in the land, of non-governmental organizations, provided of a consolidated experience in health education, and in the direct contact with the local communities. The effectiveness of the health policies that were implemented is due to in a large part, to the fact of having carried out a correct epidemiologic preliminary assessment, aimed to establish the prevalence of endemic pathologies in each sanitary district, in such a way to allow a rational collocation of drugs, medical devices, services and human resources. The elimination program has besides hired personnel with experience in very large network of the non-governmental organizations (around 23,000) [3] –constituted by physicians, paramedics and voluntary personnel with a health training base– also for the gathering of epidemiologic data, the mass drug distribution by the *Mass Drug Administration-MDA,* health education, the *Case Management* and post treatment *Screening* [4]. In the following pages, will be closely examined, the program about the elimination of the lymphatic filariasis, which actually is in an epidemiologic control phase, that has followed to the interruption of the mass drug treatment (MDA) [5], the foregone by an indication by the World Health Organization [6].

2. The Global Program of Elimination of the Lymphatic Filariasis

Recent estimations asses in 68 million, the affected people by lymphatic filariasis in the world (40 million people present chronic manifestations of the disease: among which mainly appear hydrocele and lymphedema) [7, p. 538]. The disease is present in Asia, and Sub-Sahara Africa, in South America and in Oceania. In Asia, India is the mostly endemic country, followed by Indonesia, Nigeria, Bangladesh, and Myanmar. Data of 2013 [8, p. 414] of the World Health Organization related to Bangladesh, estimated in

49'660,000 people in need of drug treatment, datum which actually, thanks to the success of the elimination program, is adjusted to 3'211,000 [9, p. 445].

The lymphatic filariasis is a parasite disease caused by nematodes (worms), belonging to the *Wuchereria bancrofti* (filariasis of Bancroft), *Brugia malayi* and *Brugia Timori* (brugian filariasis) species. The vector of the human infection is the mosquito that injects the larvae of the parasite during the biting: these are introduced at the point of inoculation and migrate through the lymphatic vessels. Therefore, they settle in the lymphatic vessels and in the lymphatic glands where they become an adult worm in a period of 6 to 12 months.

The transmission from person to person is cause by the ingestion of the larvae by an insect that has bitten a subject in whose blood stream are present the larvae (microfilariae) and for the transmission to an ulterior individual during an afterwards blood feeding. The infection leads to microfilariae, a condition in which no clinical manifestations are evident. These, are caused by the progressive obstruction of the lymphatic vessels, caused by the development of the microfilariae in adult worms, with the consequent edema, ascites, hydrocele, lymphedema: manifestations that can also show up years after the first infection. The hypertrophy of the sub-skin tissues, especially in the lower limbs (lymphedema/elephantiasis), and of the scrotum in men (hydrocele), has serious disabling effects. The deformity in the limbs, due to the abnormal swelling of legs and feet (reason why the sickness, is also known as elephantiasis), one a certain degree of severity is reached, it tends to continue also after the drug treatment, making the disability hardly reversible.

Filariasis besides, causes an intense and recurrent pain, a reduction in walking, secondary bacteriological infections and fever, the psychological suffering with the consequent compromise of labor capabilities, limitation in day by day activities, and the interruption of assistance to school. The deformities of the limbs also are a motive for stigmatization, social isolation, and for women, a reduc-

tion in the marriage perspectives. It is estimated that the productivity of the affected persons, could be reduced up to 88% [10, pp. 1 and ss].[2]

Already in 1997, The General Assembly of the World Health Organization launched a *Resolution* about the elimination of the lymphatic filariasis, in which it asked the member countries, to adopt specific programs of action. The resolution especially committed countries to:

— take advantage of the advancement in the knowledge of the lymphatic filariasis, and of the recent opportunity to defeat the disease performing national plans for elimination, and monitoring measures and of assessment of the effectiveness of such activities;
— to promote local programs, and integrate the action with the sanitary activities and the interventions already acting in the area, in such a way as to carry out measures easily performable, sustainable and culturally acceptable. To carry on, wherever possible, also the control of the vectors, by means of measures taken for the improvement of the sanitary-hygienic conditions;
— to promote the formation, research, laboratory diagnostics, the development of specific competences about the sickness, and data analysis for the purpose of improving clinical practices and organizational capabilities;
— to give an impulse to the participation of the communities affected by the sickness, an support of the non-governmental organizations and of all the relevant participants [11].

In the year 2000, the World Health Organization, giving follow-up to the *Resolution* launched by the World Program of lymphatic filariasis elimination [12]. The program has been carried out thanks to a *PARTNERSHIP* between the World Health Organization, the World Bank, pharmaceutical companies, non-government organizations,

and local government's representatives. The innovating feature of the program has been to adopt a model based on direct collaboration of the local governments: all the countries members of the Alliance have chosen a group of representatives with different *EXPERTISE,* and capable of thinking about the peculiar positions of each country.

The adopted approach, based on a *Governance* model "from the vertex on" it leads to consider the elimination global program of the lymphatic filariasis, a program called "vertical". The most recent literature has shown with clarity the limits of the vertical programs, such as the treatment discontinuity, the exclusive focusing in a single illness with an inefficient use of resources, for the system's interventions. In addition, the careless epidemiologic assessment and posttreatment surveillance, lack of integration and coordination of the activities with programs mostly financed with a risk of intervention duplication and of resources, and even result's falsification for satisfying the donors' expectations [13]. The performing of programs so called "horizontal", on the other hand, requires health systems with good quality services, and spread out in the area, and above all the presence of a percentage of specialized health operators. The World Health Organization in around 23 personnel units per each 10,000 inhabitants [14] has estimated this that represent conditions very frequently hard to perform in developing countries, among which is Bangladesh in particular that is in the threshold of 6 units of medical and paramedic personnel per each 10,000 inhabitants. The use of personnel, who already are officials of the NGO has and of the voluntary people members of the local communities in Bangladesh, as it also happens in other developing countries, is aimed precisely to furnish to such lack of services and of sanitary personnel. [3, p. 2012 and ss.]. Therefore, nevertheless, that the global program of elimination of the filariasis is considered a "vertical" program, one of its strengths has been indeed, the success in the participation of the organizations present in the area, and the contact with local communities, in accordance with an equivalent model to the *Community-Driven* approximation.

3. The lymphatic filariasis elimination program in Bangladesh

The government of Bangladesh has joined the global program of elimination of the lymphatic filariasis postponing his own national plan for the elimination of the sickness, to before the end of 2015 [15]. The national program has been developed with respect to three main guidelines:

— Mass provision of drugs;
— Control of the morbidity rate at local communities levels;
— Sensitivity and health education campaigns

In the performing of the three points of the national program, preventive measures have been experimented (control of infection vectors), *the case-management* (diagnosis and treatment case by case), the provision of drugs of single dose, for all the population of the endemic areas (preventive chemotherapy) and, finally, information and sanitary education campaigns. Not all the measures have demonstrated a satisfactory ratio cost/efficiency. As an example of the previous statement, we have the infection vector control whose concrete performance in economic and organizational terms mostly is as follows: the difficulty to integrate the existing measures to the environmental prevention, in order to control the malaria vectors for both diseases in the endemic zones. [3; 16].[3] Equally, the diagnostic and the treatment case by case, in as much efficient in the clinical level, they have shown hardly sustainable in the economic level, given that, the individualization of the ill people would have required, even being limited to the endemic districts, a *SCREE-NING* of population performed in millions of individuals [4, p. 14 and ss.]. The true breaking point in the control, firstly, and in the elimination of the sickness, afterwards, has been the development of preventive chemotherapy treatment to a single dose. The drug distribution by local volunteers at the work and educational sites,

the worship sites, the establishments, the markets and even door by door. All the above together have become, consequently, the elective strategy with a level of coverage and of effective intake of the drugs that in 2010 had already reached between 77 and 90 percent of the population, on the basis of several assumptions and estimations. [15, p. 18].

Fifteen years after the beginning of the program, the penetration of the infection by lymphatic filariasis, is below the threshold of risk of diffusion throughout the population [5]. Bangladesh has also completed the two ulterior provision of necessary drugs added up, to satisfy the assessment criteria of the transmission risk (*Transmission Assessment Survey- TAS)* [17, p. 453]. After these successes, the country has carried out the post treatment assessment, performed based on whatever is disposed by the World Health Organization guidelines [6]. Today's objective for the program of elimination of the lymphatic filariasis is to establish an epidemiologic surveillance mechanism, that would allow its unfolding in the field of the ordinary activities foreseen by the National Health System.

4. The *Community-Driven* approximation (promoted by the community)

The *Community-Driven* approximation (*promoted by the community)* has demonstrated to be a particularly efficient strategy in the control of tropical diseases due to carelessness, the lymphatic filariasis included. The results of a study performed in Ghana and in Kenya, for example, have shown that the provision of drugs through direct contact with local communities, has reached a 75% to 88% level, a threshold considered sufficient to lead the countries towards the elimination of the disease [18, p. 235].

The efficiency of the *Community-Driven* approach is given by the capability of doing the entire treatment program (prevention, diagnosis, drug provision, epidemiologic surveillance) understandable and

culturally acceptable. This objective has been mainly achieved through the inclusion of the community itself. It is required for the community, to point out among its own components, the people considered capable of assuming the job of taking care of withdrawal and distribution of the drugs, and of the control of their correct intake.[4] The launching of the program begins with the information regarding the disease, and the discussion with the members of the community about all the aspects of the program, including the drug donors, the government contribution, the role of the local health organizations, and the eventual forms of incentive for the volunteers. [18] Furthermore, the community population of has a way, to indicate the drug distribution modalities, which suit better to the life and word rhythms, to the social roles, and to the religious practices of the town [20].

The volunteers chosen by the community receive a basic sanitary training that ensures the necessary competences for the selection of the sick people, for the provision of drugs, and for the transmission of clinical data to health personnel. The government and the non-governmental organizations have formed and actively supported the volunteers of the local communities as a function of the organization and management of the basis sanitary assistance. The support of the organization and management are based on the 70-decade campaigns for the vaccination against small pox, the interventions in the area for the diffusion of rehydration therapy against infant diarrhea, and afterwards the sexual and reproductive education campaigns [3, p. 2014; 21].

Another central element of the *Community-Driven* approach is the role acknowledgement to the direct participation of the local community, also with respect to the treatment. The community is encouraged to perform its own monitoring of the results of the drug provision, and to inform to the sanitary personnel about eventual problems found, which has indeed favored the spread out in a wide scale up to cover the national territory [3. P. 2013].

The larger contribution in terms of personnel hired for the health assistance, the prevention and the education in the local communities, is indeed attributable to the non-governmental organizations, especially the BRAC,[5] the main NGO of the country. The experience of the NGO's volunteers has been in fact, determinant especially in the contact with the communities living in rural zones highly difficult to reach, deprived of infrastructure and of services, favoring the cultural acceptance of the treatments, and prophylaxis and prevention measures. An ulterior positive characteristic is the capability to conduct a frequent and constant visit to the sick people's domicile that has ensured, in addition to an effective sanitary coverage, also the verification of the drug intake, and the proper use of sanitary devices, of the preparations and the instruments for the control of the infection vectors.

The experience, matured since the 70's, beside, has shown the motivational importance for the higher personnel, represented by having received a proper training, and by the presence of a constant supervision. Meanwhile, the possibility or not to foresee an economical compensation or a material incentive for the volunteers in so far a retribution, remains controversial, even though it is minimal, because it is hardly sustainable from the economic point of view, for countries of low output.

The motivation and the training of volunteers has demonstrated essential for the purposes of the efficiency in the *Community-Driven* approach. As an example, a recent study with data regarding Uganda and Nigeria has linked the extreme difficulty found when contrasting in an efficient way the spreading of schistosomiasis, plus the very high cost of treatment (praziquantel), which strongly limits its availability [22]. The above with a low investment by the governments, in the training of volunteers. A blocking element for the proper investment of resources in the training of medical personnel and in the sanitary education of the population is represented by the practically exclusive occupation by them, in the activities

that foresee the objective achievement in a short term, in a way to answer the requirements of drug donors and economic assistance.

To conclude, it can be claimed that the *Community-Driven* approach presents several highly positive elements. Besides ensuring an effective and efficient pharmacological coverage of the population, it has been shown capable of including even the most remote communities, activating the resources of people and of family groups, in the use of preventive measures, in the management of sicknesses, and in motivating and adopting habits and daily prophylaxis behavior. Thus, performing a first form of *Empowerment,* of the most vulnerable levels of the population [23].

5. The local clinics

Another key factor in the success of the *Community-Driven* approach has been the building of local sanitary references –the so-called *Community-Clinic*– capable to offer basic assistance to the population[6] and a wider access to drugs and to primary care [24]. The *community-clinics*, if so built beginning the 2000/2001 years, as a part of the public health service, have been properly financed for a long time, and they have been rarely used in the drug distribution. The current sanitary policy, has recognized its role, and has foreseen specific financing for the empowerment of the local clinic network, in a way to ensure the presence of a clinic for each 6,000 inhabitants [24; 25].

A feature that has been shown to be significant for the contribution to the efficiency of the community clinics, in terms of prevention, of *Compliance* of the population, and the contention of pathologies of higher penetration is the quality perceived in the services and the relationships in therapies by the users. «The experience of Bangladesh, as well as the one of China, of Nepal and the other countries, provides a substantial evidence of the fact that, the perceived quality in health services has a remarkable impact in the le-

vel of usage. The insufficient use of the sanitary facilities of primary assistance, and the resources to the volunteers, is due to the disaffection and to the perception of a low quality in the care […]» [26. p. 2]. «A factor that contributes in a significant way to the perception of proper quality in the assistance, including an efficient organization of services, is the about the relationship skills and the capability of care of the hired personnel, especially in the interventions which cover aspects of the private life, particularly sensitive as the sexuality and the reproduction» [26, p. 13].

For what is concerned with the subject matter of our paper, it deserves to be noticed that in 2001, was built in Nilphamari, one of the sanitary districts with more penetration of the disease, a hospital capable of treating hundreds of sick people every year. This was an action of the elimination program of the lymphatic filariasis.

6. Equality and training

As Amartya Se observes [27], the message that can be obtained from the Bangladesh experience is very important for comparable countries, from the socio-political point of view, and that suffer a devastating poverty condition. Sen identifies some determining factors of the social transformation process that have enormously contributed, to the net improvement of the population's life and health conditions. In the first place, they have reduced the gender inequity in some fundamental areas. The schooling of girls and teenage girls, with a frequency rate currently above the male, the spreaded participation in productive activities, (among which in the first place the textile industry and clothing manufacturing) jointly with efficient campaigns for the reproductive health and family planning. These have certainly had a significant impact in the reduction of gender inequalities, with positive consequences to health and to the quality of life of all the community. An ulterior

factor that has characterized in a peculiar way the development process in Bangladesh has been the adoption of a «pragmatic and pluralistic model» [28]. This factor has allowed integrating to the inner part of the common programs, public and private sectors, and non-governmental organizations, preventive regulation instruments and interventions in the territory, wide spread among themselves. Amartya Sen himself, puts in evidence the importance of having done an innovated approach aimed to the contact with the *Community-Driven* territory.

According to our analysis, the second and third factor show a particular interest in as much they are more directly related to the success obtained in the diseases control, among which the lymphatic filariasis is. Following a suggestion from Amartya Sen himself, it seems to us that we can affirm that the results achieved in Bangladesh could be interpreted through the optics of the model aimed at training. Such model, setting it as an alternative to the formal imposition of the contractual tradition, aimed to the equal distribution of goods, and the tutelage of the rights. it sets the objective of the political action to the performing of economic, cultural, and social conditions, that would allow people to concretely perform «that what they are, and what they are capable to do». «The idea of training (defined as the possibility to reach a valid combination of that which constitutes a human being's functioning, or else that which a person is capable to be and to do) can be of great help in the understanding of the aspects related to the role played by the opportunity to perform the liberties and human rights. Truthfully, the concept of opportunity is frequently invoked, without giving it any significant elaboration; for this reason, the idea of training can be of great help, to clear out better its meaning. For example, to interpret the opportunity in terms of training, allows us to distinguish in a proper way. i) the case of a person who is effectively capable of doing the things that it would be considered of value doing from the situation; ii) of a person that simple possesses the means, the tools, or has the permission to pursue that which he would like

to do (its effective ability to pursue such objective, can depend on many contingent circumstances)» [29, p. 153].

Such model seems to describe in a proper form how much is done in Bangladesh, by some NGO's, which have set their action, previously to the direct and exclusive economic support of the poor levels of the population. About the *Empowerment* both political and cultural, particularly among women, as a measure of social transformation, and for the equity of gender. Such initiatives have had altogether a larger and more lasting effect over the economic development, with respect to the actions exclusively aimed to the support of the productive activities by means of the microcredit. By this, indirectly showing the effectiveness of the concepts of economic policy, directed to human development, besides growth.[7] An example related to this matter, is represented by the activities of *Nijera Kori,* one of the few Bangladesh NGO's, which has kept the original commitment of social transformation by through what can be described as «a radical approach aimed at training». This means to reinforce the individual capabilities of poor men and women; to improve and enhance their critical awareness and situation analysis; and find ways to develop their political competence, in thinking and acting as citizens. Therefore, «while Sen has stated openly, how the human rights could be interpreted as an assertion of particular or personal capabilities, the NK approach can be understood as specially oriented towards the development of capabilities, in order to be able to vindicate fundamental human rights» [31, p. 48].

By having achieved better social conditions for women, and the political and cultural *Empowerment* of women, they had made possible the acquiring of driving capabilities, also with respect to the improvement of health conditions of the population. As an example of this last one, are the results obtained by the sanitary education programs, among which, firstly there is, to give instructions to mothers on the use of rehydration, as a means to treat the infant diarrhea, performed by the NGO BRAC [1, p. 1741; 21, p. 2035], or the reproductive education campaigns, promoted by the gover-

nment. «The family planning programs have been capable to increase social acceptance, and have been able to create a contraception culture, even in the poorest areas». Starting at the early 90´s, almost all women have been contacted at least once by the family assistant, and almost one third have been taken care of at home, every six months. «Having secured the direct contact has been particularly important at a time when the cultural constraints limited much the mobility of women» [21, p. 2032].

It is worth to conclude these brief observations by stating a particularly significant direct testimony. «The relations with *Grameen Bank* (an NGO specialized in micro-credit), were based in loans. Even if a relative had passed away, you were accountable to pay the monthly payments. At the time of the agreement for the loan, they had clearly stated, that even if a child would have recently died, you were accountable to pay the loan's quota. If these conditions were agreeable for you, you would be able to get the loan. Nobody took care of how we could be able to change the way of thinking, of how we could improve ourselves. With *Nijera Kori*, it is not about money. They do not give us money, but advice about how we can improve our life and about what we can do to create a better more positive future for ourselves. Before, we were ignorant, now we have become wise women» [31, p. 62]. Even if «my husband kicks me out from home, if he threatens me saying that he wants to get a divorce, even if I still want to be with him, I go to the support group (*samity)*. They can do something for me I am sure. […] If somebody goes to the support group *(samity) of NK,* and informs them of cases like these, they protest. The people who work for *Grammen* do not do that. They do not come to help you; the relationships are solely based on the loans» [31, p. 63]

7. Interpretation of results and ethical issues

Is it possible to obtain a *Governance* of the NTD's[8] from the Bangladesh experience?

It has been observed that the success of Bangladesh seems to demonstrate that «it is necessary to begin with the most relevant problems, which can be more easily solved. To enhance the solutions in a way to reach everybody. To add new strategies, one at a time, in the extent necessary in which the subjects to whom they are aimed, be aware of their needs, and the means that are necessary to be able to address them. This is the lesson that can be obtained from Bangladesh for all the countries. Successes feed other successes because they provide renew trust, hope and determination. Vice versa, by having to confront at the same time multiple challenges to the inner part of a program that wants to be thorough, can have as a result an insufficient coverage of the population, demotivation and a persuasive sense of defeat. The concrete achievements obtained in Bangladesh against every probability, are based on the will to address one problem at a time, with the commitment to reach them all. If this can be defined as, "a vertical program" then so be it. Nevertheless, examples of efforts for the development, that would have achieved a success in such a wide scale, are not as frequent as to ignore an approach that undoubtedly has worked» [32, p. 1037].

From the reflections exposed up to here, is maybe possible to derive a theoretical model for the *governance* of the approaches aimed to ensure the sanitary coverage and the struggle against diseases caused by negligence and poverty. Never before, as in the case of Bangladesh, has it been shown evident, how an efficient counter position against illnesses for negligence, could be achieved through an integral socio-sanitary approach. This approached was aimed on one hand, to eliminate the socio-economic determinants of the illnesses, and on the other hand, to integrate all the programs that have as an objective the elimination of concrete pathologies. In other words, Bangladesh represents a positive example of the revolution in the approach to the struggle against illnesses by negligence. This has led to the overcoming of the exclusively biomedical model, in favor of the approach aimed at actions capable

to modify the socio-economic determinants of the illnesses [33-34].

By wanting to propose a reading on more strictly theoretical plane, it is possible to identify some criteria that have been guided, if implicitly, the government action and of the local organizations, in the struggle against illnesses. In the first place, the decision to preliminary choose the problems, and establish their priority. An innovating factor with respect to this issue, as it has been mentioned before, seems to be given by having chosen as a criterion to establish priorities, the balance between urgency and effectiveness. The majority of investments in terms of economic, human and technical resources, in other words, have been dedicated to the problems, which have the same severity, show a higher possibility to be solved. This criterion could be, under good reasons, considered an enhancement of the principle of resources optimization, and not only the economic ones.

An ulterior direction, which results evident, is the adoption of a policy aimed to the gradual expansion of the sanitary services towards all the citizens. Such policy seems to have applied the principle of universality of the treatments, through a highly pragmatic setting, that has preferred the consolidation of some results before extending the service to the rural zones, which are more difficult to reach, as the performance process of the *Community-Clinics* demonstrates it.

An element that deserves to be presented, furthermore, it has been the attention to the reduction of inequalities. As we mentioned before, the effectiveness of such approaches in support of poverty, and in the promotion of the economic development in Bangladesh, it is not measurable in terms of the acquired economic goods. It is also not measurable in terms of the simple flow of capital to the inner part of the country, or better stated, in the integral improvement of life conditions of the citizens, parallel to the economic development with other South Asian countries comparable by culture and by social and demographic characteristics [35, p.3].

In the end, a conclusive observation is made regarding the capability shown by the approaches performed in Bangladesh, to propose proper solutions not only to the nature of the problems, but also to the understanding of the same, and to the cultural acceptability of the solutions proposed. A particular significant example, of how it has been exposed in the preceding pages, is constituted by the modality of the performance of the *Community-Driven* approach, which has seen a strong participation by the community, both, in the understanding of the problems, as well as their effective collaboration in the programs.

On last consideration, unfortunately of an inverse sign, is instead in contrast made over the scarce transparency of the political power mechanisms, and of the re-distribution of public resources, which characterizes the country. The foregone has been gone for years, and it still has a high rate of corruption, positioning it in the 26th place among the 176 countries that were examined by *Transparency International* in 2016. It is a social organization characterized by a limited social mobility; this is caused by a social classes system, derived from the traditional castes, jointly with an income within the market economy, which has favored almost exclusively the predominant social classes. The scarcely transparent public resources management mechanisms, and lastly, a scarce democratic culture in the population, are some of the most evident elements. Notwithstanding such limits, nevertheless, the country is currently in an epidemiologic transition phase, of the prevalence of infectious and acute diseases, towards the prevalence of chronic and degenerative pathologies. Such transition, and the increasing requirements by a part of the citizens, regarding treatments and sanitary care, especially in the urban context, have led to an offer in the market, of paid benefits, frequently of low quality and economically very expensive [36]. The new challenge for Bangladesh is, therefore, to ensure a strong incentive to mechanisms capable of ensuring transparency, and responsibility in sanitary policies in the management of the institutions [37].[10]

8. Current status of the ethical principles in the Alma Ata Declaration

What has been examined up to now can be interpreted, as a concrete example of the current situation and the centrality of some ethical principles laid as a basis for the international declarations on the universal sanitary coverage. It is significant to observe how, both the *Alma Ata Declaration on primary sanitary assistance* [39], as well as the most recent agreement of the World Health Organization, on the universal sanitary coverage [40]. Both reaffirm strongly, the role that the ethical principles have in every planning of the priorities of the scopes, and in the programming of activities in the territory. The philosophy based on which *the Alma Ata Declaration* is inspired, is based on a strong accent on the sanitary assistance as a factor of social justice. This has recently been reassessed, precisely because of the importance conferred to the participation of the local communities. This participation has been mainly on the definition itself of the objectives and of the sanitary priorities, and by the farsighted indication of the necessity to integrate the sanitary levels, with an integral action on the social determinants of health [34]. In this regard, the experience of Bangladesh is mentioned as an example of the good functioning of such strategy of integrated approach. «The collaboration among institutions linked to various sectors of health, is usually considered a non-relevant aspect of the primary sanitary assistance. The foregone, especially because such sectors have their own priorities and responsibilities, and they do not consider the sanitary issues as matters of their own competence. […] The improvement in health of the population in countries such as Sri Lanka, Cuba, Costa Rica, and Bangladesh must be attributed to the public works achievement, to the access to education, to the development of agriculture, to the granting of microcredits, and to the creation of jobs, as well as the initiatives in the sanitary field. The national policies can facilitate such collaboration, but

only the action in the territory, can achieve that the synergies be done effectively» [34, 924].

It is worthwhile to mention how the World Health Organization itself, has recently reaffirmed the role that the ethical principles in guiding the action of the programs for the performance of the universal sanitary coverage. Such frame of principles can be synthetized as follows:

— *Availability*: every significant resource (instrumental, programs, human resources, materials and products) necessary for the expenditure of benefits and sanitary services, must be available in sufficient quantity to cover the population's needs, and must be furnished the nearest possible to the users.
— *Accessibility:* the health services must be accessible to all those that would show to have a need. The accessibility must cover the physical scope, the availability of information, the equality and the non-discrimination.
— *Economical sustainability:* the sanitary benefits must be economically sustainable by the population, especially in countries of low income, context in which a modest economical contribution can also disappoint a request for attention.
— *Quality:* all the significant resources for health must be of a proper quality.
— *Adaptations:* the organization of health services has to take into account the petitions of individuals, and to take into consideration the health conditions, the environment and the personal characteristics of the users (age, gender, life style, etc.).
— *Acceptance*: People must be actively included in all the treatment process phases, in such a way as to be able to make decisions, and keep control over all the options concerning to them. This also means that he, who disburses the health services, must address people´s demands.

— *Equity or Justice:* Equity in the access requires that all the people can get the health services they need, without suffering for this, an economical inconvenience [40, p. 9].

Some goals reached by Bangladesh, are indeed coherent with the ethical principles on which, *The Alma Ata Declaration,* and the program for a universal sanitary coverage promoted by The World Health Organization are inspired. We must observe how the practical execution of such principles requires, as it is evident, "system interventions" aimed to create structures, to activate services, and to form *in loco* (locally), dedicated personnel. Under this perspective, reading about Bangladesh achieved successes in the sanitary field, although they are relevant, they look more as the fulfilment of defined objectives aimed at specific groups and at population levels, through the pragmatic and gradual optics shown above. The achievement of such objectives has had, in fact, a positive impact in the entire social group, as the programs aimed at the sanitary education of women, and the ones oriented towards the jointly mother child health, have showed it. However, it still has to do with not yet structured operations and interventions, and above all, not yet oriented to ensure an effective equity in the access to sanitary assistance, for all the citizens.

Moreover, there exist other aspects, more directly related to economic growth and to the "epidemiologic transition" that create new risks of impoverishment and sanitary emergencies, for larger levels of population, especially in the urban areas. This social transformation phenomenon, requires from the government institutions, the capacity to consolidate the achieved results, spreading and enhancing them so that, to include "the poorest among the poor", and at the same time, to address the ever increasing demand for care of chronic and degenerative diseases. Such new needs for attention and care have generated an offer of private sanitary care services, frequently of low quality, and with high and sometimes not affordable economic costs, for many citizens. The

success achieved, runs the risk of partially be reduced to banality, by the rise of new forms of inequity, in the access to medical treatments. To perform actually, whatever is necessary as required by the principles of quality in the services, and of equity in the access, represent to Bangladesh an ethical and political challenge, more than ever, present.

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[1] TBC means Tuberculosis (Note of the Spanish translator)
[2] See also the page dedicated to Lymphatic Filariasis at: http://www.who.int/lymphatic_filariasis/disease/en.
[3] For example, in co-endemic areas for malaria and filariasis, it has been performed a unique epidemiological mapping, based on the population screening. Given the difficulty to contact and reach the local communities, and of a unique use of instruments for controlling the vectors, were distributed, especially mosquito screens impregnated with pesticides, and careful dosage of drugs were provided, used in the treatment of both diseases [3, p.163]. See also D. MUPFASONI, A. MONTRESOR, A. MIKHAILOV, J. KING, *and The Impact of Lymphatic Filariasis Mass Drug Administration Scaling Down on Soil-Transmitted Helminth Control in School-Age Children* [16].
[4] The World Health Organization acknowledged the essential role represented by the volunteers and the informal workers for health, thus, has launched a program aimed to individualize standards for the training, assessment and recognition of their work. Cf. World Health Organization (WHO), Global Strategy on Human Resources for Health [19].
[5] BANGLADESH RURAL ADVANCEMENT COMMITTEE.
[6] Such as mother-child assistance, reproductive health, vaccinations, food education and distribution of micronutrients, sanitary education, infection's control, first-aid and data gathering on the health status of the population, and transmission to second and third level sanitary institutions.
[7] See for example A. SEN, Lo sviluppo è libertà. Perché non c'è crescita senza democrazia [30].
[8] Neglected Tropical Diseases
[9] See the relationship in the site https://www.transparency.org/news/feature/corruption_perceptions_index_2016.
[10] See also the equity model for the universal sanitary coverage, proposed in the recent listing of the ad hoc work group of the World Health Organization [38].

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