

Ex post evaluation – Vietnam

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Sector: Medical services (CRS code 12191)

Project: Cooperative programme to strengthen decentralised health care systems

(BMZ no. 2006 65 174)*

Implementing agency: Provincial People's Committees of the Phu Yen, Thanh Hoa and Yen Bai provinces.

Ex post evaluation report: 2017

		Planned	Actual
Investment costs (total)	EUR million	12.5	12.49
Counterpart contribution	EUR million	2.5	2.5
FC Funding (BMZ budget funds)	EUR million	10.00	9.99

*) Random sample 2016



Summary: In the programme, three provincial hospitals and 12 district hospitals in the Thanh Hoa, Phu Yen and Yen Bai provinces received funding for replacement and extension investments, for training medical and technical staff in how to use the supplied equipment correctly, and for maintenance contracts. Selected institutions were supported, in particular through training during the set-up of maintenance systems as well as measures improving the repair systems and the disposal management of hospital waste. During implementation, additional IT equipment and software were provided. Complementing this, human resource capacities were built up and extended in the fields of health management as well as preventive and curative health services by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

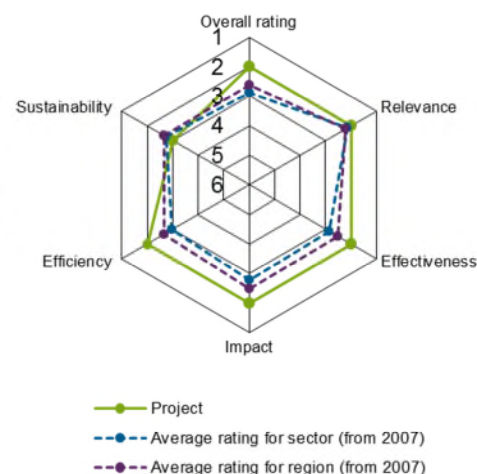
Development objectives: The population in the catchment area of the promoted hospitals makes more use of the health care services that have been improved in terms of both quantity and quality (outcome). This was meant to improve the health of the population in the programme provinces and help achieve Millennium Development Goals 4 and 5 (reducing child and maternal mortality) (impact).

Target group: The population in the catchment areas of the state district and provincial hospitals supported in the three programme provinces.

Overall rating: 2

Rationale: Improving the quality and the quantity of health care at district and provincial level is essential for providing better care to the population, and became even more important after demand increased as a result of expanding health insurance for a large portion of the Vietnamese population over the past years (**good relevance**). The **effectiveness** and **impact** of the programme were **good**, although target achievement and impacts cannot be attributed solely to the FC measure. The decentralised implementation structure and the selection of the provinces compromised production efficiency, while allocation efficiency is good since the equipment supplied is fully functional and, except for the washing machines, intensively used. There is a need for improvement in the field of maintenance.

Highlights: The IT component subsequently added when introducing the hospital information system constitutes an innovation in Vietnam and can therefore be regarded as a success. Data availability has increased, processes rethought, transparency increased, and routine data can be used quickly for decision-making.



Rating according to DAC criteria

Overall rating: 2

Relevance

The core problem was correctly identified: the health care system in the three programme provinces is inadequate in terms of both quantity and quality; thus the programme was and is essentially relevant. Vietnam's population is aging (average age was 25.4 in 2005, but increased to 30.7 by 2015), and its demographic and epidemiological transition is continuing. This manifests itself in the decrease of morbidity and mortality resulting from infectious diseases, while there is an increase in chronic-degenerative diseases (cancer, heart disease) as well as increased morbidity and mortality resulting from accidents related to rapid traffic development. At the same time, communicable diseases remain at a high level. These trends require significant adjustments in the diagnostic and treatment options in the Vietnamese health system, which were enabled by the programme investments supporting hospitals in the Phu Yen, Thanh Hoa and Yen Bai provinces.

The programme's chain of effects largely rests on sound logic. The improved medical equipment, maintenance and repair as well as waste water and waste management in the promoted state-owned district and provincial hospitals, together with the staff and institutional capacities set up in connection with Technical Cooperation (TC) were to result in improvements in terms of both quality (including environmental compatibility) and quantity of the services offered by the supported hospitals, which would then be used more by the population. This was to contribute to improving the health of the population in the catchment area of the promoted hospitals in the programme provinces and be a means of achieving Millennium Development Goals 4 and 5 (reducing child and maternal mortality). At programme appraisal, it was also expected that the project would strengthen the referral system, which seems plausible as well. Strengthening the breadth and depth of services at the programme hospitals as well as the related quality was meant to result in more patients demanding the services at the lower care levels (firstly district hospitals, and only then provincial hospitals) and the hospitals being able to offer services for which previously they would have had to refer patients to higher care levels (provincial hospitals up to central hospitals). The focus on the poor and on ethnic minorities as well as the population in remote areas, which was partially intended at programme appraisal (PA), was taken into account by selecting institutions with a broad impact with regard to these specific target groups. The assumption behind this was that access to health care services by expanding health insurance would be improved for these population groups in particular. However, supporting the supply side alone cannot ensure that medical services are used equally by all population groups.

The programme met the target of the Vietnamese government at the time, which is still valid today, of ensuring "universal health coverage for all by 2020". Since the beginning of 2015, the emphasis has been on strengthening the lower levels (local to district level) – including financially – with the Vietnamese state intending to finance the local level and the donors concentrating on the district and provincial levels. This approach is in line with that of the programme, which focused on three provincial and 12 district hospitals. Health is generally an important issue for the Vietnamese government, as is also evident from the "Socio-Economic Development Strategy for the Period of 2011–2020". In this document, the government confirms the high priority given to developing the health care system and improving the quality of health services, and plans a continuous increase in government spending on the health sector until 2020.

The programme was implemented in close cooperation with German Technical Cooperation and complements projects of other donors (e.g. ADB, EU, JICA and the World Bank), with the selection of the supported provinces and care levels tightly managed by the government. Some of the hospitals participating in the programme continue to receive FC support in follow-up projects.

From today's point of view, improving the quality and the quantity of health care services at district and provincial level is essential for providing better care to the population. It has become even more important after financial barriers regarding access were torn down with the step-by-step introduction and extension of health insurance for a large portion of the Vietnamese population in recent years. Since the beginning of 2014, all officially poor people, all ethnic minorities as well as the bulk of the "near-poor" (about 50% in

2015) have health insurance coverage. (When the programme was appraised in 2007, most of the poor and the ethnic minorities lacked insurance coverage for illnesses.) The chain of effects rests on sound logic, but causalities cannot be proven one by one. Taking into account the above restrictions, relevance is rated as good.

Relevance rating: 2

Effectiveness

The objective of the FC measure defined for the ex post evaluation (EPE) is that “the population makes more use of the health care services of the hospitals promoted in the catchment area that have undergone both quantity and quality improvements (including environmental compatibility)”. The following indicators are used for appraising effectiveness: (1) usage rate of the medical equipment sourced in the programme; (2) number of annual admissions per year; (3) occupancy rates for bed spaces and (4) increase in the number of major surgeries per year. Indicator 1 was assessed during the programme. Indicators 2 to 4 were added for the EPE, and the target achievement was determined for the hospitals visited as part of the EPE (7 out of 15). Indicator 4 also gives a clue as to whether the programme was able to contribute to strengthening the referral system by improving service quality at district and provincial level.

The achievement of the programme objectives can be summarised as follows:

Indicator	Status PA, Target value PA	Ex post evaluation
(1) Usage rate of the medical equipment sourced in the programme	Status PA: 0 Target at PA: 85%	Phu Yen: 95% Thanh Hoa: 95% Yen Bai: 95%
(2) Number of admissions per year		2010: 97,484 2015: 147,828
(3) Occupancy rates for beds		2010: 158% (over-occupancy) 2015: 155% (over-occupancy) (with an increasing number of beds)
(4) Increase in number of major surgeries per year ¹		2010: 8,591 2015: 16,297

The indicators underpin the successful target achievement. The equipment delivered and installed (medical devices and IT equipment) -that was inspected during the mission- still seems to be in working order and used intensively, even 8 to 10 months after the maintenance contracts expired.

Patient numbers and bed occupancy rates indicate increased demand for the services of the programme hospitals. The number of patients admitted per year increased by more than 50% on average between 2010 and 2015. In the same period, while the number of bed spaces increased, occupancy rates for beds in the hospitals visited decreased slightly (by about 3% on average), with total occupancy rates for beds remaining very high (average rate for 2015: about 155%) and clearly indicating over-occupancy. However, increased demand in the programme hospitals can be attributed not only to improved quality through the services offered by the hospitals, but also and primarily to the elimination of financial barriers. One of the main reasons for the positive trend in demand is the introduction of social health insurance in Vietnam.

¹ It should be noted here, however, that Caesarean sections were considered “major surgery” in some hospitals, but not in others.

Between 2010 and 2015, the number of major surgeries increased significantly: by 79% in the district hospitals visited and by 100% in the provincial hospitals. This suggests that the programme had a positive effect on the strengthening of the referral system. However, structural factors also contributed to these improvements, in particular since the introduction of higher usage fees for patients skipping the referral system in 2009.

The programme hospitals were able to widen their range of services and treat more patients than before the FC programme. It could not be verified during the EPE to what extent this improved and expanded range of services can be used equally by all population groups (including the poor and ethnic minorities), and whether said use is hampered by additional costs like transport and wage losses for the patient or any accompanying person, where applicable, as well as by additional fees that are not refundable by health insurance. The same is true for ethnic stereotypes and discrimination of ethnic minorities that might limit equal access and adequate treatment in the programme hospitals.

According to their statements, all health institutions have a maintenance plan and carry out repair and maintenance of medical equipment accordingly. However, observations made during the EPE mission suggest that maintenance plans were often drawn up pro forma, and the repair and maintenance of medical equipment was not carried out properly and regularly (see “Sustainability”).

According to information received, in the Phu Yen and Yen Bai provinces only about 80% or 75% of health facilities respectively have environmentally sound waste and waste water management; to what extent these are operated properly could not be checked based on data (emission of hazardous substances, etc.). The goal to improve not only elements of hygiene and waste management (e.g. central sterilisation, laundry), but to embed the idea of total quality management was only partially successful. Monitoring is not reliable either, despite the use of IT. For example, the rate of nosocomial infections (acquired in hospital) was not recorded in the hospitals visited, though it would definitely be possible to collect and document such data. So certain deficiencies regarding hygiene still persist. The purchase of laparoscopic equipment for minimally invasive surgery by means of laparoscopy operations should have been supported even more strongly (process management, training) in the field of hygiene and with replacement materials for several years, since the equipment currently poses a hygiene risk that exceeds that related to conventional surgery.

Thanks to the equipment financed throughout the programme, the hospitals visited are now able to provide 80% of the services defined for their care level (as compared to 40% prior to the programme). Since large portions of the population were included in health insurance when the programme was implemented, demand certainly increased more strongly as a result of eliminating the financial barriers than could be expected solely as a result of improving service provision. The Vietnamese government's measures for expanding health insurance (demand side) and strengthening service provision by the hospitals through German DC (supply side) complemented each other very well. Even if the target achievement cannot be attributed solely to the FC measure, effectiveness is considered good under the given circumstances.

Effectiveness rating: 2

Efficiency

The total implementation period up to the completion of all programme activities was 53 months (as opposed to the 36 months planned at the appraisal). Apart from late reconstruction work and preparations with the counterpart contribution, this delay can be attributed to circumstances that were not known at the time of the appraisal (in particular the implementation of an additional feasibility study required by the Ministry of Health before launching the measures and implementing the IT component that was not initially planned).

The programme was implemented in a decentralised manner by the respective Provincial Department of Health (PDoH). The decentralised implementation structure seems reasonable, in principle, for ensuring that equipment is adjusted to actual local needs; it may also have increased ownership. At the same time, this structure ensured that the FC measure was in line with the strategic goals of provincial health policy as well as measures of other donors active in the programme provinces. When designing the IT component, this structure required intensive coordination between the provinces, which in some cases proved to be a lengthy process resulting in delays.

The three programme provinces were selected by the Vietnamese partner with due consideration of social indicators, the proportion of ethnic minorities, complementarity with other development partners, etc. The institutions supported in the programme were selected after extensive mapping of existing health institutions in the three programme provinces by taking into account population numbers, population density, availability of support by other donors, absorbing capacities of health institutions, their geographic location and the districts' poverty indicators.

Medical equipment was selected with the help of the consultant based on a needs analysis according to epidemiological needs and clinical requirements. According to the hospitals visited, this essentially met their needs. According to the final inspection, however, the hospitals were not sufficiently involved in selecting the IT equipment, which led to lengthy adjustments of software to the hospitals' needs and requirements. In this context it must be noted that introducing the hospital information system was an innovation in Vietnam, meaning that a number of initial difficulties had to be overcome.

It exists a large number of suppliers for the medical equipment procured. The batches were not drawn up by functional group, but by province, and tendered internationally. As a result, the bidders were "package dealers", i.e. enterprises capable of supplying a broad scope of equipment, which may have compromised the value for money ratio as well as the quality of services under the maintenance contracts, although specific indications in this regard are not available. One positive aspect, however, is that as a result of this procedure each provincial administration only had one enterprise as a contact partner.

The high occupancy rate of the programme hospitals visited suggests high allocation efficiency in selecting the hospitals. From the EPE perspective, the selection of the provinces seems to have been reasonable on the whole. Furthermore, cooperation between German DC (focusing on improving supply at district and provincial level) and the Vietnamese government (supporting the demand side and the local level) seems to have been efficient from today's point of view. The large geographical distance between the two northern programme provinces, Thanh Hoa and Yen Bai, and the southern Phu Yen province posed avoidable difficulties regarding programme implementation for the implementation consultant. This distance incurred additional travel costs for the consultant, while increasing some expenditures for coordination within the programme in designing the IT component. Having the programme focus on provinces located geographically closer to each other, as is planned in some follow-up projects, could have increased efficiency.

Despite the above restrictions, efficiency is rated as good based on the indicators for good allocation efficiency.

Efficiency rating: 2

Impact

The development objective of the programme was to contribute to the improvement of the target group's health in the three programme provinces, and to achieve Millennium Development Goals 4 and 5 (reducing child and maternal mortality). At the time of appraisal, neither base values nor target values were defined. So the base value here is established from the data supplied by the provinces for 2010.

Indicator	Status 2010	Ex post evaluation (2015)
(1) Reduction of maternal mortality (per 100,000 live births)	Yen Bai: 6.79 (not reliable) Thanh Hoa: 56.15 Phu Yen: 70 National average: 58	Yen Bai: 21.53 (+217%) Thanh Hoa: 46.2 (-18%) Phu Yen: 58.3 (-17%) National average: 54
(2) Reduction of child mortality (<5) (per 1,000 children)	Yen Bai: 14.12 Thanh Hoa: 7.2 Phu Yen: 25 National average: 23	Yen Bai: 11.84 (-16%) Thanh Hoa: 3.97 (-45%) Phu Yen: 15.4 (-38%) National average: 22.1

The data available suggests that maternal mortality has been reduced both at provincial and national level, while most of the maternal mortality rates measured at provincial level are not very reliable (see Yen Bai) and yearly mortality figures fluctuate considerably. In Phu Yen the maternal mortality rate remained above the national average despite a 17% decrease between 2010 and 2015. Child mortality has improved significantly since the time of appraisal and was significantly below the national average² of 22.1 out of 1,000 children under the age of five in the three programme provinces in 2015, with this already having been the case in 2010, except for the Phu Yen province.

Altogether it seems plausible that the programme was able to contribute to improving the health situation. However, the better health situation can also largely be attributed to national economic development that is positive overall (real annual GDP growth has exceeded 5% since the time of appraisal, average per capita income has more than doubled since the time of appraisal), accompanied by increasing education, the introduction of social health insurance as well as significant national and donor-financed investments at all levels of the referral system.

Due to the improved level of equipment in the programme hospitals, their attractiveness as employers increases, constituting a possible motivation for doctors to continue working in state hospitals and not to practice privately in addition to their regular work, as is common with doctors in Vietnam. In addition, by creating better services at district and provincial level, the programme contributed to strengthening the referral system and relieving the higher levels, which are generally still overloaded (see effectiveness, indicator 4).

Even if the effects cannot be attributed solely to the FC measure, the impact can still be considered good for the reasons stated above.

Impact rating: 2

Sustainability

The improved level of equipment results in new or additional sources of revenue for the programme hospitals – either from usage fees or services refunded by the health insurance – for services that previously could not be provided because of a lack of technical or staff capacities. Altogether, the programme hospitals' financing seems to be relatively sound and sustainable, at least as long as the public health insurance (VSS) continues to pay as reliably as it has to date. Both revenues and the provinces' health spending have increased significantly since 2007, although there are differences between the programme provinces.³

The maintenance contracts in the hospitals visited were renewed for very few systems only (in particular for computed tomography [CT]); apart from that, maintenance is the task of the respective hospital technicians. The budget for maintenance and spare parts fluctuates between 0.2% and 4.6% of total spending in the hospitals visited (while 5% would be reasonable according to the WHO). However, these figures have little meaning since there is no uniform booking rule, so repairs and spare part replacements are recorded in the same budget line, while staff costs for technicians and engineers (in proportion to their maintenance work) are not booked to this account. In reality – with the exception of the renewed contracts for CTs – spending on preventive maintenance is likely to be low. Pursuant to the implementation agreement, a yearly increase of the maintenance budget to 3.5% of the hospital budget was planned. It was observed on-site that this is not achieved with the accounting practices. Financially, the hospitals should be able to carry out maintenance. However, during visits to selected programme hospitals one got the impression that investments were not regarded as complex analyses of all lifetime costs (i.e. including consumables, disposal, etc.), but primarily as current payments. This suggests the maintenance concept has not been internalised. Some of the hospitals visited had no maintenance plan. Even if they did, it seemed that the plan had been drawn up pro forma and is not tracked by the Provincial Department of Health. So

² UNDP

³ Revenues in Phu Yen and Yen Bai increased by about 120–140% since 2007, while the increase in Thanh Hoa amounted to about 300% in the same period. While health spending increased to a disproportionately high extent compared to revenues in Phu Yen and Yen Bai provinces between 2007 and 2015 (Phu Yen + 315%, Yen Bai + 360%), health spending in Thanh Hoa increased to a disproportionately low degree compared to revenues (about + 260% versus + 300% increase in revenues).

there is a risk that the useful life of the equipment procured in the project will not be identical to the service life stated by the manufacturer.

The follow-up costs of new equipment apart from maintenance are reasonable. Staffing on the whole was considered to be appropriate. However, in most of the hospitals visited, the usually found one technician per hospital is not enough. Staff fluctuation is relatively low, so training financed by the programme should pay off in the long run. Nevertheless, the dominant role played in hospital management by doctors, the majority of whom are not trained in management, could compromise the project's sustainability. Together with a culture that is delegation-averse and has a strong hierarchy in decision-making, this could have a negative effect on the maintenance and use of the machines supplied, and therefore on sustainability.

The observations of the EPE mission suggest that hygiene and waste management are only partially regarded as systems in the programme hospitals, i.e. the entire hygiene and waste process is not fully integrated into the treatment process. Beyond that, anecdotal evidence suggests that infection rates after surgery in the provinces are significantly higher than in the national hospitals, which poses a risk for the sustainable effect of the programme, since the strengthening of the referral system and the improvement of the target group's health are compromised.

Given the above considerations on the one hand, and the hospitals' sound financing on the other, sustainability is considered satisfactory.

Sustainability rating: 3

Notes on the methods used to evaluate project success (project rating)

Projects (and programmes) are evaluated on a six-point scale, the criteria being **relevance, effectiveness, efficiency** and **overarching developmental impact**. The ratings are also used to arrive at a **final assessment** of a project's overall developmental efficacy. The scale is as follows:

Level 1	Very good result that clearly exceeds expectations
Level 2	Good result, fully in line with expectations and without any significant shortcomings
Level 3	Satisfactory result – project falls short of expectations but the positive results dominate
Level 4	Unsatisfactory result – significantly below expectations, with negative results dominating despite discernible positive results
Level 5	Clearly inadequate result – despite some positive partial results, the negative results clearly dominate
Level 6	The project has no impact or the situation has actually deteriorated

Rating levels 1-3 denote a positive assessment or successful project while rating levels 4-6 denote a negative assessment.

Sustainability is evaluated according to the following four-point scale:

Sustainability level 1 (very good sustainability): The developmental efficacy of the project (positive to date) is very likely to continue undiminished or even increase.

Sustainability level 2 (good sustainability): The developmental efficacy of the project (positive to date) is very likely to decline only minimally but remain positive overall. (This is what can normally be expected).

Sustainability level 3 (satisfactory sustainability): The developmental efficacy of the project (positive to date) is very likely to decline significantly but remain positive overall. This rating is also assigned if the sustainability of a project is considered inadequate up to the time of the ex post evaluation but is very likely to evolve positively so that the project will ultimately achieve positive developmental efficacy.

Sustainability level 4 (inadequate sustainability): The developmental efficacy of the project is inadequate up to the time of the ex post evaluation and is very unlikely to improve. This rating is also assigned if the sustainability that has been positively evaluated to date is very likely to deteriorate severely and no longer meet the level 3 criteria.

The **overall rating** on the six-point scale is compiled from a weighting of all five individual criteria as appropriate to the project in question. Rating levels 1-3 of the overall rating denote a "successful" project while rating levels 4-6 denote an "unsuccessful" project. It should be noted that a project can generally be considered developmentally "successful" only if the achievement of the project objective ("effectiveness"), the impact on the overall objective ("overarching developmental impact") and the sustainability are rated at least "satisfactory" (level 3).