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India: Gujarat Earthquake Rehabilitation

Ex-post evaluation

OECD sector	1) 72010 – Emergency/Distress relief 2) 24030 – Formal sector financial intermediaries	
BMZ Project ID	1) 2001 65 407, HDFC IV (Gujarat Earthquake Rehabilitation I) 2) 2001 65 738, HDFC IV (Gujarat Earthquake Rehabilitation II)	
Project executing agency	Housing Development Finance Corporation (HDFC)	
Consultant	1) BGS Ingenieursconsult International GmbH 2) Not applicable	
Year of ex-post evaluation	**2006**	
	Project appraisal (planned)	**Ex-post evaluation (actual)**
Start of implementation	1) 07/2001 2) 11/2001	1) 12/2002 2) 11/2001
Period of implementation	1) 36 months 2) 24 months	1) 34 months 2) 25 months
Investment costs	1) EUR 13.77 million 2) No info. available	1) EUR 15.75 million 2) No info. available
Counterpart contribution of NGOs (HDFC IV/1) or borrowers (HDFC IV/2)	1) EUR 3.55 million 2) At least 20%	1) EUR 5.52 million 2) Met
Finance, of which FC funds	1) EUR 10.23 million 2) EUR 15.34 million	1) EUR 10.23 million 2) EUR 15.34 million
Other institutions/donors involved	World Bank, ADB, etc.	World Bank, ADB, EC, IFAD
Performance rating	1	
• Significance/Relevance	1	
• Effectiveness	1	
• Efficiency	1	

Brief Description, Overall Objective and Project Objectives with Indicators

On 26 January 2001, a serious earthquake shook the central and western region of the Indian federal state of Gujarat. Measuring 6.9 on the Richter scale, it took a death toll of about 14,000 with almost 167,000 injured. The reconstruction of the areas affected was supported under FC by the following projects:

a) HDFC IV/1: Reconstruction of destroyed housing and rehabilitation of social infrastructure in approx. 45 villages

b) HDFC IV/2: Refinancing soft loans for reconstruction and construction of housing and social infrastructure in the earthquake zone

German FC provided EUR 25.5 million altogether for the projects. The funds for the HDFC IV/1 project amounting to EUR 10.2 million were provided to the Housing Development Finance Corporation (HDFC) as a grant, while the EUR 15.3 million in funding for HDFC IV/2 was made available as a FC development loan (low-interest loan) to the HDFC.

The objective of the HDFC IV/1 project was the construction/reconstruction and use of housing and social infrastructure by the population directly affected by the earthquake (programme objective). HDFC IV/2 came about as a complementary project to meet the additional credit needs of builders who were not directly hit by the earthquake but intended to construct housing and social infrastructure in the earthquake zone via an efficient lending scheme run by the programme executing agency HDFC (programme objective). Both projects were therefore intended to make a contribution to improving the conditions of life in the earthquake-affected programme region (overall objective).

Programme objectives achievement was to be measured by the following indicators:

HDFC IV/1:
- Completion and occupation of 8,500 houses and completion and operation of seven schools, basic health centres, assembly halls and agricultural production centres

HDFC IV/2:
- Credit line allocated 2 years after project start at the latest
- Final borrowers finance at least 20% of total costs in social infrastructure
- Minimum repayment rate of 80%

In the HDFC IV/1 project, the overall objective was to be deemed met on attainment of the programme objectives. The following overall objective indicators were stipulated for the HDFC IV/2 project:

- At least 80% of the new or refurbished housing financed from final loans are occupied a year after completion of construction.
- At least 75% of the social infrastructure facilities financed from the final loans are in operation a year after completion of construction.

Programme Design/Major Deviations from Original Programme Planning and Main Causes

India has recorded remarkable economic growth over the last decade, which has also resulted in higher per capita income. Nevertheless, the average figure in 2004 amounted to about US$ 630 (on appraisal US$ 460) only. India thus ranks in the midfield of low-income countries. Growth has also brought about progress in poverty reduction. Nationwide, the share of people living below the poverty line (World Bank definition) declined from 36% in the period under review to about 26%. Measured in absolute figures, however, there has been an increase in poverty over the last four decades. The country has the highest number of absolutely poor people worldwide (about 300 million). Income disparities are large, the rift between urban and rual areas is wide and there are enormous differences amongst the individual federal states. On the Human Development Index India has been relegated from No. 115 to 127 out of 177 countries since project appraisal in 2001 (for more information see Annex 2).

India's persistent social problems are also evident in the housing sector, which is unable to supply the requisite quality and quantity of housing, especially for low-income sections of the population. While the banks have taken a larger role in housing finance in recent years, the market has been traditionally dominated by housing finance companies (HFC). Founded in 1977, the Housing Development Finance Company (HDFC) is the oldest private HFC in India and also the most important with a market share of almost 30%. Owing to rising per capita income, declining interest as a result of keener competition amongst housing financiers and tax privileges, the market for housing finance has grown markedly in recent years. Outstanding mortgages between 1994 and 2004, for example, grew by an annual average of 21% from US$ 1.8 billion to US$ 12.3 billion. At 2.21% of GDP in 2004, aggregate mortgages thus fall far short of international averages (EU 45%, East Asia 30%). According to the Registrar General, the Indian demographics authority, the housing shortage currently amounts to 19.4 million (77% in rural areas) with an additional 4.5 million every year.

Besides the humanitarian disaster inflicted by the earthquake of 2001 in the federal state of Gujarat in northwest India, the greatest damage was caused to the population’s housing. In the five hardest hit districts more than 800,000 dwellings were destroyed or damaged in 1,300 villages and eight towns. Furthermore, two hospitals and a large number of social infrastructure facilities such as schools, outpatient health stations, etc. were heavily damaged or destroyed completely. The costs of reconstruction were estimated by the World Bank and the Gujarat federal state government at about US$ 2.3 billion, the bulk of US$ 1.1 billion for housing construction.

The Gujarat Disaster Management Authority (GDMA) was set up to coordinate reconstruction. Besides bearing a pro rata share of the costs, it was primarily responsible for establishing the relevant framework and guidelines. For the most part, the actual implementation of the reconstruction measures was to be carried out by non-governmental institutions (NGOs) which were also required to make their own financial contribution. Each family whose house had been destroyed by the earthquake was to receive a grant contribution from the GDMA, the amount depending on the size of living space destroyed. Besides the contribution by the Indian government, finance was to be provided by the World Bank (US$ 1 billion) and the ADB (US$ 0.5 billion). The FC project HDFC IV/1 was designed to fit in with the organisation of the reconstruction programme coordinated by the GDMA. As implementation units, local NGOs were responsible for the procurement of building materials as well as awarding contracts and the payment of construction workers. The administrative implementation of the project and the supervision of the NGOs was entrusted to the HDFC as programme executing agency. Favourable experience had already been gained with the institution as executing agency for various housing programmes in FC. The measures were complemented by FC-financed consultancy services, which were mainly concerned with ensuring adequate participation by the population in designing the houses, and supporting the executing institution and the NGOs in procurement and planning measures as well as building supervision. Maximum amounts of FC assistance were set for the beneficiary population with added compensation payments to the households as mentioned above. The maximum sum for assistance to build the permanent shelters, which made up the bulk of construction, for example, amounted to about EUR 950. See Annex 3 for a graphic depiction of the implementation structure.

Contrary to the original plan of complying with the state selection process and targeting only those sections of the population that also received compensation payments, in the course of implementation the municipalities often made the selection with the NGOs and the consultant. The reason for this were the frequent corrections and delays in the process. There are no indications of irregularities in the selections made, however. The participant NGOs were selected in the planning stage on the basis of their presence in the affected districts and their prior experience (for more detailed information see Annex 5). Although only a few of the 14 NGOs involved in implementation had gained experience in constructing permanent shelters at the time of the appraisal, their engineers and skilled building workers were given ongoing training by the consultant in earthquake-resistant construction methods. The integration of the NGOs and their progressive support during implementation through consultancy services facilitated a participatory approach involving the population in planning the measures on the one hand and earthquake-resistant quality assurance of the dwellings, on the other. The latter would probably not have been possible with direct assistance to the households due to excessive savings incentives. Altogether, the design and the building quality of the houses can rate as good. As envisaged, the residents made their own contribution by preparing the building plot. In two districts, the SEWA NGO also demanded monetary contributions of up to 10% for setting up a municipal development fund worth EUR 150,000 to pay for developing infrastructure and possible reconstruction work in the event of other disasters. The mode of operation of HDFC as the programme executing agency for housing construction projects had already been examined in detail in the ex-post evaluation of HDFC II (BMZ No. 1993 65 800) conducted in 2005 and was assessed to be very good. In the present case also, the work of the HDFC is judged to be efficient and competent, as corroborated by a fund allocation audit carried out in 2005 by PWC. Only in the case of the AHDC NGO were considerable shortcomings ascertained in bookkeeping and compliance with approval procedures. The HDFC responded appropriately here by suspending payments until these deficiencies had been remedied.

As a final outcome, the NGOs under HDFC IV/1 built 300 temporary shelters and 9,805 houses, including 6,347 permanent shelters (PS) and 1,811 single permanent shelters (SPS) and retrofitted 1,647 dwellings to make them more resistant to earthquakes. In social infrastructure, 38 units for teacher accommodation, two community centres, one girls boarding school and a nursery school were also built. Altogether, HDFC IV/1 benefited 60,500 people in the earthquake zone, as compared with an estimated total of 45,000 at the time of appraisal. The individual measures originally scheduled were partly revised in the course of implementation. The planned number of temporary shelters was revised from 2,000 to 300 due to delays with the SEWA NGO commissioned to carry out the measures and the resultant lack of ultimate demand. SEWA was contracted to build more permanent shelters instead. Subsequently 1,811 more single permanent shelters were built than planned for households under the poverty line that received no compensation payments. Not originally provided for and in agreement with the NGOs, another 3,788 sanitary facilities were installed as part of the permanent shelters.

During implementation, the HDFC IV/1 programme had to be prefinanced after BMZ approval from funds for the HDFC III project (BMZ No. 1997 65 553) as the Indian government's guarantee was still pending and the disbursement criteria could not be met. The payment of programme funds and clearance of the HDFC III project funds is scheduled for the end of 2006. After completion of the project, funds remaining amount to about EUR 1.2 million, largely due to exchange rate fluctuations and unused contingency funds. These funds will be allocated for refinancing final loans applied for by non-governmental organisations to pay for constructing housing and sanitary facilities.

The HDFC IV/2 programme was designed to complement the HDFC IV/1 programme outlined above. Besides the population directly affected, which made up the target group of the HDFC IV/1 project, there was an additional need for credit to those not affected directly by the earthquake who wanted to build housing and social infrastructure in the earthquake zone and thus make an added contribution to improving the housing situation. To refinance these loans, the HDFC as programme executing agency was granted an FC development loan of about EUR 15.3 million. The housing loans were to be issued either directly by HDFC or conduited to the final borrowers via local financial intermediaries such as the NGOs engaged in the region. At appraisal, no more than an estimated 10% of the loans were to be extended via intermediaries. The term and conditions of the final loans were geared to a refinance line of the state National Housing Bank (NHB) for the earthquake areas to meet the finance requirements of the population directly affected in excess of the state subsidies. The final borrower interest rate of 8% was positive in real terms, but included a subsidy element at the time of appraisal. On account of the provision of housing and social infrastructure in the earthquake zone by building principals lacking access to GDMA or NHB funds, this seemed appropriate.

In the first tranche of funds from the HDFC IV/2 project altogether 4,050 housing loans were issued to final borrowers in the region, 688 for house repairs and improvements and 3,362 for construction or reconstruction. The average loan amounted to EUR 2,676. Moreover, a new hospital building near Ahmadabad, the provincial capital of Gujarat, was cofinanced as a social infrastructure facility with EUR 4.5 million on specific approval by KfW as agreed. As provided for in the programme design, no loans were allocated directly to the population affected as their finance needs were primarily met through subsidies and the NHB refinance line. The market interest rate for housing loans already declined in the first year of implementation to 7.5%-8% so that the subsidy element planned on appraisal became defunct. The repayment rate for loans issued comes to 98.5%. The spot checks carried out by the technical staff of HDFC and the implementing consultant for the HDFC IV/1 project did not find any substantial fault with the houses, so that building quality can rate as satisfactory. Owing to lack of lending experience in the NGOs engaged in the earthquake area, however, all loans were issued directly to the final borrowers by the branch HDFC offices. HDFC would have had to reduce its intermediary margin in favour of the NGOs by a considerable margin to be able to arrive at an interest rate charged to final borrowers of 8%. The EUR 0.5 million earmarked under the HDFC IV/1 project to carry out training measures for the NGOs taking part in the programme was thus left used.

Also in hindsight we consider the project rationale of providing grants for housing reconstruction under HDFC IV/1 and housing loans under HDFC IV/2 as a very useful contribution to solving the core problem identified at project appraisal (housing destroyed by the earthquake). About 48% of the damage caused by the earthquake in Gujarat resulted from the destruction of housing for the local population. The two projects made a significant contribution to restoring housing for the population concerned and securing it against earthquakes. The ex-post evaluation found no indications of irregularities in the application of funds.

The overall situation in Gujarat has improved considerably five years after the serious earthquake thanks to the extensive reconstruction programme. By the end of 2005, almost 90% of destroyed and 99% of damaged housing had been rebuilt or refurbished. Numerous measures have also been completed in social and economic infrastructure. The GDMA is also concentrating increasingly on preventive disaster control measures in the region. The economic impacts of the earthquake still make themselves felt, however.

Main Results of Impact Analysis and Performance Assessment

The programme objective of HDFC IV/1 was the reconstruction and use of new housing and social infrastructure by the target group. It was to be deemed achieved when 8,500 earthquake-resistant houses had been completed and occupied and seven schools, basic health centres, assembly halls and agricultural production centres were operational. The measures in social infrastructure were adapted in the planning phase (see also Annex 7). As a result, 300 temporary shelters and 9,805 earthquake-resistant dwellings were completed as well as 3,788 additional sanitary facilities. In social infrastructure, a total of 42 facilities, including 38 units for teacher accommodation, two community centres, a girls boarding school and a nursery school were also built. These measures were adapted to the priorities of the population affected during programme preparation. The programme objective can therefore be assessed as met or exceeded.

In contrast to the real economic objectives under HDFC IV/1, appropriate financial indicators were defined for the complementary HDFC IV/2 lending programme. The programme objective, efficient lending by the executing institution, was to be deemed achieved if the following criteria had been met:

- The credit line was allocated two years after programme start at the latest.
- The final borrowers for the construction/repair of social infrastructure financed at least 20% of the total costs of the investment themselves.
- Debt service by the final borrowers was regular and timely with a repayment rate of at least 80%.

The indicators as defined were met in the scheduled time. The credit line was already allocated to 100% a year after signing the loan agreement and the funds were therefore fully disbursed within two years. In the cofinanced project for the Ahmadabad hospital, the sponsors, a syndicate of the Apollo Hospitals Group and two financiers, made a contribution of about 45% of total investment, in line with requirements. The aggregate repayment rate for the outstanding housing loans came to 98.5%. In hindsight, it would be better to take portfolio at risk as an indicator. With the low average volume of final loans - EUR 2,676 - the number of loan delinquencies exceeding 90 days can serve as a simplifed yardstick in this case. This makes for a portfolio at risk of 4.67%, which lies under the usual benchmarks and can rate as very good considering the difficult situation in the earthquake zone. The revolving funds are deployed by HDFC as part its normal business activity, particularly housing finance.

The overall objective of both projects was to make a contribution to improving the conditions of life for the population in the programme earthquake region, although indicators were only defined for HDFC IV/2. The yardsticks for overall objective achievement were (a) occupation of at least 80% of the housing financed from final loans a year after completion of construction and b) operationality of at least 75% of the social infrastructure facilities a year after completion of construction. In hindsight, it would have made sense for complementary projects with a similar overall objective to apply uniform overall objective indicators as well so that a joint performance rating could have been made. For the social infrastructure facilities, it would also have been better to adduce utilisation rather than operational readiness as an indicator. The houses inspected as part of the fund allocation audit and the final assessment for HDFC IV/1 were fully occupied. The residents were only absent in some cases due to temporary migrant labour. Considering the very high repayment rate for the home loans under HDFC IV/2, we may assume that almost all the housing is occupied. All the social infrastructure facilities financed under HDFC IV/1 and the Ahmadabad hospital are operational and are used by the target group. We therefore judge overall objective achievement as very good.

The main impacts of both projects are located at soci-economic level. Under HDFC IV/1 a significant contribution has been made to restoring housing for the earthquake-affected population and making it earthquake-resistant. The HDFC IV/2 lending programme enabled the construction of additional housing in the earthquake zone, thus also contributing to satisfying the basic needs of the population. The active collaboration of the population in planning and executing the building measures assured the sustainable use of the housing. That more than 90% of the houses were built individually on the former site is evidence of the high level of participation and that resort was not made to standardised mass solutions or forced resettlements of the affected population. Moreover, the design of the HDFC IV/1 project involving NGOs in line with the reconstruction programme coordinated by GDMA also facilitated a concerted procedure amongst the stakeholder donor community. HDFC IV/1 also had institutional impacts on the NGOs involved in implementation. The competency of these organisations in building permanent shelters was greatly strengthened. Beneficial gender impacts were also achieved in this connection: Many women have been trained in traditionally male-dominated activities. The SEWA NGO, for example, has begun a follow-on training project for women bricklayers. Under the HDFC IV/2 project, efficient use was made of the financial sector with the HDFC as programme executing agency to achieve the real economic objectives, the improvement in the conditions of life for the population in the earthquake zone by providing additional housing. Owing to its design as earthquake assistance, the project was not expected to have capacity-building impacts on the financial sector at the appraisal stage. The very high repayment rate of the project clearly indicates that the parallel application of a subsidised and credit-financed housing programme did not result in any adverse displacement effects in the programme region.

The population directly affected by the earthquake largely belonged to the economically weaker sections, i.e. those with an annual household income < INR 30,000 (approx. EUR 750). The target group was actively involved in planning and implementation, so we assign HDFC IV/1 to the poverty category SHP (project appraisal classification: ODP). We may assume for HDFC IV/2 as a lending programme that the share of poor households amongst final borrowers was not above the Gujarat average. We therefore still classify HDFC IV/2 as CPR (project appraisal classification: CPR). In HDFC IV/1, the above-mentioned beneficial gender impacts consisted in the training and employment of a large number of women in a traditionally male-dominated sector. Both projects were able to contribute to gender equality and are therefore classified under category G 1 (project appraisal classification: G 0). Environmental protection and resource conservation were not a focus of the projects and no adverse environmental impacts were recorded in implementation, so we classify the programme as ER 0 (project appraisal classification: each ER 0). The beneficiaries' own contribution and the largely independent planning, implementation and upkeep of the housing measures make up a major element of the HDFC IV/1 project. Participation/good governance thus constitute important secondary objectives of the programme and we classify it as PD/GG 1 (project appraisal classification: PD/GG 1). The promotion of participatory development was not a major element in HDFC IV/2, so we classify the project as PD/GG 0 (project appraisal classification: PD/GG 0).

As the projects were designed to complement each other, we shall make a joint assessment of their developmental efficacy. Summarising, our assessment of the projects HDFC IV/1 and HDFC IV/2 is as follows:

We gauge programme objectives achievement, both the reconstruction and the use of new housing and social infrastructure by the target group (HDFC IV/1) and efficient lending by the programme executing agency for achieving the real economic objectives (HDFC IV/2) as good. In the course of implementing HDFC IV/1 some situationally adapted building measures were carried out with more variations than originally planned, which is also attributable to the active participation of the NGOs and the population affected. Nevertheless, the objectives can rate as having been met or exceeded. With the FC funds of both programmes a total of 13,855 housing units were built or rehabilitated in the earthquake zone and additional social infrastructure facilities set up. We can assume almost full use made of the housing. Despite the difficult environment in the earthquake region, the lending programme recorded a high repayment rate. Altogether, we assess the **effectiveness** as good (**Subrating 1**).

The overall objective of the projects was to make a contribution to improving the conditions of life for the earthquake-affected population. After the earthquake in 2001, by far the greatest damage was the destruction of housing for the predominantly poor population of Gujarat. Both FC projects have made a considerable contribution to reconstruction and hence to the satisfaction of the affected population's basic needs. The HDFC IV/1 project also had beneficial capacity impacts on the participating NGOs by raising their competencies in building permanent shelters. The participatory approach of actively involving the population in planning and implementing the measures sets an example for disaster relief projects. Moreover, project design fitted in well with the donor constellation as a whole. In the case of HDFC IV/2, efficient use was made of the financial sector to achieve the project's real economic objectives. Both projects have therefore made a substantial contribution to solving a relevant problem in the earthquake region. As earthquake assistance, we therefore assess the **significance/relevance** of the programmes altogether as good (**Subrating: 1**).

We judge the allocative efficiency of the HDFC IV/1 project to be good. Thanks to the specification of maximum FC assistance and the low unit costs, it was able to carry out the planned number of individual measures. The planned programme objectives were also reached or exceeded with a low input of resources. Production efficiency in HDFC IV/1 is also rated as good. As the implementing NGOs had only limited know-how in housing construction, some weaknesses emerged during implementation, but this only resulted in serious deficits and cost overruns in one case only. Moreover, at INR 11.2 millions as compared with INR 11.8 million, the administrative costs of the NGOs amounted to slightly less than planned at the time of the appraisal, despite the larger number of measures carried out. The allocative efficiency of the HDFC IV/2 programme also merits the assessment good. Loan interest was positive in real terms and contained a subsidy element at the time of the appraisal, but due to a drop in interest rates in the course of implementation, this was eliminated through market mechanisms. Especially considering the difficult setting, the repayment rate and portfolio at risk are gauged as very good. Based on highly efficient organisational and process capacities known from other housing programmes, we assess HDFC's production efficiency as good. Moreover, the objectives were accomplished in both projects within the scheduled time frame. Altogether, we assess the **efficiency** as good (**Subrating 1**).

Taking all the above impacts and risks together, **we assess the developmental efficacy as good (Rating 1)**.

General Conclusions

The above projects illustrate how essential a timely intervention and speedy start of implementation are for successful earthquake assistance programmes. On the one hand, this is the only way to assure efficacy for the target group and the appropriate visibility of the programme and on the other, it affords scope to coshape key parameters and carry out measures in a concerted way with government agencies and other donors. Due to the delays in the requisite governmental guarantee for FC, a punctual start of implementation for the HDFC IV/1 project was only possilbe through pre-finance from another project's funds.

The participatory approach of actively involving the population in planning and implementing the measures sets an example for designing disaster aid projects. The flanking support given to the implementing units by consultancy measures, which were stepped up during implementation, resulted in good target-group outreach and sustainable use of the housing.

The combination of an emergency aid and finance sector project would appear to be a suitable way to improve the conditions of life for the population in the disaster region. While the emergency aid project had direct impacts on the population, the financial sector project contributed to satisfying additional housing and social infrastructure needs and improving the conditions of life as a result. The mutually complementary design of the projects with the same overall objective should, however, also be provided with coherent indicators for this level to enable joint performance measurement. At project objectives level, however, a distinction between real economic and financial indicators makes sense due to the different structures.

Legend

Developmentally successful: Ratings 1 to 3	
Rating 1	**Very high or high degree of developmental effectiveness**
Rating 2	**Satisfactory developmental effectiveness**
Rating 3	**Overall sufficient degree of developmental effectiveness**
Developmental failures: Ratings 4 to 6	
Rating 4	**Overall slightly insufficient degree of developmental effectiveness**
Rating 5	**Clearly insufficient degree of developmental effectiveness**
Rating 6	**The project is a total failure**

Criteria for the Evaluation of Project Success

The evaluation of the "developmental effectiveness" of a project and its classification during the ex-post evaluation into one of the various levels of success described in more detail below concentrate on the following fundamental questions:

- Are the **project objectives** reached to a sufficient degree (aspect of project **effectiveness**)?
- Does the project generate sufficient **significant developmental effects** (project **relevance** and **significance** measured by the achievement of the overall development-policy objective defined beforehand and its effects in political, institutional, socio-economic and socio-cultural as well as ecological terms)?
- Are the **funds/expenses** that were and are being employed/incurred to reach the objectives **appropriate** and how can the project’s microeconomic and macroeconomic impact be measured (aspect of **efficiency** of the project conception)?
- To the extent that undesired **(side) effects** occur, are these tolerable?

We do not treat **sustainability**, a key aspect to consider for project evaluation, as a separate category of evaluation but instead as a cross-cutting element of all four fundamental questions on project success. A project is sustainable if the project-executing agency and/or the target group are able to continue to use the project facilities that have been built for a period of time that is, overall, adequate in economic terms, or to carry on with the project activities on their own and generate positive results after the financial, organisational and/or technical support has come to an end.