

Annex

Report of the group of experts established pursuant to
paragraph 12 of Security Council resolution 1153 (1998)

EXECUTIVE SUMMARY

1.1 Terms of reference

1. Paragraphs 12 and 13 of Security Council resolution 1153 (1998) of 20 February 1998 read as follows:

"12. Requests the Secretary-General to establish a group of experts to determine in consultation with the Government of Iraq whether Iraq is able to export petroleum or petroleum products sufficient to produce the total sum referred to in paragraph 2 above and to prepare an independent report on Iraqi production and transportation capacity and necessary monitoring, also requests him in the light of that report to make early and appropriate recommendations and expresses its readiness to take a decision, on the basis of these recommendations and the humanitarian objectives of this resolution, notwithstanding paragraph 3 of resolution 661 (1990), regarding authorization of the export of the necessary equipment to enable Iraq to increase the export of petroleum or petroleum products and to give the appropriate directions to the Committee established by resolution 661 (1990);"

"13. Requests the Secretary-General to report to the Council, if Iraq is unable to export petroleum or petroleum products sufficient to produce the total sum referred to in paragraph 2 above, and following consultations with relevant United Nations agencies and the Iraqi authorities, making recommendations for the expenditure of the sum expected to be available, consistent with the distribution plan referred to in paragraph 5 above;"

1.2 Introduction

2. At the request of the Secretary-General, a group of experts visited Iraq to ascertain the current export capacity of crude oil and petroleum products, and also to review and assess the potential for increased exports of crude oil and petroleum products.

3. The group consisted of six experts, each with a specific oil industry background. Two of the United Nations oil overseers accompanied the group. The group visited Iraq from 12 to 22 March 1998, to observe the condition of the

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production and transportation facilities necessary for the export of petroleum and petroleum products.

4. The scope and purpose of the site visits were:

- To establish current crude production capacity;
- To establish the condition of the oilfields and relevant production capabilities;
- To establish the condition of crude oil processing and treatment facilities;
- To establish the status of the storage terminals and transportation infrastructure;
- To identify the necessity, cost and implementation time-frame for required spare parts and repairs;
- To inspect local refineries.

All elements have been examined and the results are given in detail in the report.

1.3 Methodology

5. In order to satisfy the terms of reference, the group of experts needed to maximize the collection and verification of data within the time-frame allocated. This was achieved, after initial meetings with the Ministry of Oil in Baghdad, by visits to the North Oil Company, based in Kirkuk, the South Oil Company, based in Basrah, and numerous site inspections in both areas - including a cross-section of production facilities, processing plants, tank farms, pumping stations, metering sites and refineries. The group of experts separated into two teams at various locations in order to facilitate greater coverage.

6. Owing to the lack of measurement equipment operating at all stages of production and transportation (except at the export installations of Ceyhan and Mina Al-Bakr) estimates were made based on:

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- Physical inspection coupled with on-site discussion with experienced operators;
- Information supplied at various meetings and briefing sessions with the Oil Ministry, North and South Oil Companies, and refinery/plant visits;
- Analysis of historical data;
- On-site application of the group's accumulated experience and subsequent discussion.

At all stages the group noted the physical condition of plant as seen, and obtained photographic and video records.

1.4 General observations

7. The group of experts' overall general impression is that the oil industry of Iraq is in a lamentable state. The developed oilfields have had their productivity seriously reduced, some irreparably, during the past two decades. The oil processing and treatment facilities, refineries and storage terminals in the country have been severely damaged and continue to deteriorate. This deterioration, particularly in the oilfields, will accelerate until significant action is taken to contain and relieve the problems.

8. Although measurement devices are non-existent at Iraq's oil producing fields, the team has identified oilfield production and treatment as one major constraint with respect to increased production. Because of the age and precarious physical condition of the main fields there is strong doubt among the experts that the production profile of 3 million barrels per day (bpd), as the Government of Iraq is endeavouring to achieve, will be sustainable for the period under review. A sharp increase in production without concurrent expenditure on spare parts and equipment would severely damage oil-containing rocks and pipeline systems, and would be against accepted principles of "good oilfield husbandry".

9. A second major constraint is that the transportation system and intermediary storage within Iraq are significantly compromised and need repairs at critical points. Significant issues are the degradation of the 40-inch pipeline, major losses in pumping capability and reduced intermediary storage capacity in the north, with identical problems in the south.

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10. A third constraint is the need for proper coordination of loading schedules at the offshore terminal at Mina Al-Bakr, supported by efficient and reliable tugboats and mooring boats.

11. Provided that the pipeline infrastructure and intermediary storage to the loading facilities in Ceyhan and Mina Al-Bakr are brought up to standard, there may be no need to utilize other existing pipelines for increasing export volumes.

1.5 The current overall capacity as advised by the Ministry of Oil

12. According to the Ministry of Oil, the following is the present capacity in barrels per day before repairs and improvements are undertaken:

Production	2 330 000 bpd
Local consumption	<u>700 000 bpd</u>
Available for export	1 630 000 bpd

1.6 Historical data of oil exports under the oil-for-food programme

13. All exports under the oil-for-food programme have been monitored by Saybolt, and the table below shows the rates of exports per day under the current mechanism:

Phase I average export	664 000 bpd
Phase II average export	1 124 000 bpd
Phase III	
- February 1998 average export	1 121 000 bpd
- March 1998 average export	1 223 000 bpd

1.7 Proposals to increase production

14. At the first meeting between the group of experts and officials of the Ministry of Oil, it was stated by the officials that the targets proposed and already submitted to the United Nations were:

<u>Time-frame</u>	<u>Production</u>
Current production	2 300 000 bpd
Achievable within two to three months	2 650 000 bpd

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Achievable within six months	3 000 000 bpd
Achievable within 18 months	3 500 000 bpd

The expenditure required to reach these targets would be:

US\$ 340 million to reach 3 million bpd production within six months

\$400 million to sustain 3 million bpd production over a 12 month period

\$300 million extra to reach 3.5 million bpd production within 18 months

15. Nevertheless, the Ministry of Oil was also cognizant of the high level of proposed expenditure, and its effect on the availability of funds for humanitarian aid, and had produced a revised spare parts estimate, indicating the lowest possible figure to achieve 3 million bpd production within six months. The revised figure was \$210 million.

16. In addition, the Ministry produced spare parts documentation requesting a further expenditure of \$90 million related to "downstream" operations. The downstream operation comprises the operation from refinery to consumer. The requirements vary for spare parts and repairs for petrol stations, liquified petroleum gas filling units, etc. While not strictly relevant to the group of experts' objectives in relation to the increase of oil exports, these requirements have been noted, and the request is considered to be reasonable.

17. The increase in production from 2.3 million bpd to 3 million bpd over six months is planned for both the north and south, as follows:

	<u>Current</u>	<u>Three months</u>	<u>Six months</u>
North	1 000 000 bpd	1 055 000 bpd	1 162 000 bpd
South	<u>1 300 000 bpd</u>	<u>1 600 000 bpd</u>	<u>1 800 000 bpd</u>
Total	2 300 000 bpd	2 650 000 bpd	2 962 000 bpd

18. The accurate verification of production figures is not currently possible, as the oil industry in Iraq has no functioning internal monitoring system in operation. Wellhead production is not measured, movement between terminals is only estimated or is based on non-calibrated meters and/or storage tanks, and the whole operation is close to collapse.

1.8 Export of petroleum products and local consumption

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19. The Government of Iraq indicated to the group of experts that the export of petroleum products would not be considered, mainly in view of the poor quality of the products and the lack of refining capacity. It is considering, however, the initial export of some 30,000 to 50,000 bpd of straight-run fuel oil (atmospheric residue) by direct injection into the Kirkuk-Yumurtalik pipeline in Iraq, before the metering station at Zakho, thus mixing it with Kirkuk crude exports. If marketable, this may be increased to 100,000 bpd.

20. Observation of the working refineries in Iraq has shown that the condition of the refineries in general is indeed poor. Significant pollution and environmental damage has also been noted. The current refining capacity and consumption is about 700,000 bpd, consisting of 620,000 bpd of local refining capacity and 80,000 bpd exported to Jordan. Local consumption is deducted from overall production to derive the potential export volume/value.

1.9 Group of experts' estimate of local consumption

21. The estimate of quantity available for export automatically requires an estimate of local consumption. The group of experts has estimated local consumption to be 630,000 bpd. This has been calculated by reference to production throughputs provided by refinery staff and plant operators interviewed during site visits. The estimate is summarized in the relevant appendix to the report.

1.10 Group of experts' opinion on spare parts and repairs

22. In view of the deplorable state of the oil industry, the group discussed with the relevant authorities of the Government of Iraq the priorities for essential action. As indicated, the group had received a list of spare parts based on a minimum spare parts requirement of \$210 million. An initial investigation into the key items affecting short-term production increase and transportation suggested delivery times of two to six months and prices marginally higher than estimated. A fully comprehensive review of the lists, in respect of prices, relevance and delivery time, is expected to be completed soon.

23. With regard to the monitoring of incoming spare parts and repairs, the group visited suitable warehouses in both the northern and southern parts of Iraq. The methodology of monitoring the arrival, storage and utilization of the spare parts is described in more detail in the report.

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1.11 Conclusions

24. Without rapid and adequate investment in spare parts and repair of the production wells, plus the development of a number of smaller fields, the gap between the existing decline curve and the projected increment in crude oil production will grow wider for each month that financing is delayed.

25. The oil industry of Iraq has the expertise and technical knowledge to increase production gradually over the next 18 months.

26. The incremental increase in the "production versus time" scenario proposed by the Ministry of Oil is a reasonable one, representing a viable optimization of the large number of petroleum-engineering variables in the equation. The Iraqi-proposed profile, however, is deemed optimistic with regard to the gross volumes predicted, as well as unrealistic in terms of timing (see table below).

<u>Profile</u>	<u>Current production</u>	<u>After three months</u>	<u>After six months</u>
Ministry of Oil	2 300 000 bpd	2 650 000 bpd	2 962 000 bpd
Group of experts	2 160 000 bpd	2 130 000 bpd	2 360 000 bpd

27. Current production as indicated above by the group of experts is 2,160,000 bpd. This results in a daily export capacity of 1,530,000 bpd, taking into consideration that, according to the group's estimate, 630,000 bpd is used for local consumption.

28. As described above, Iraq is presently exporting approximately 1,200,000 bpd. With a current capacity of 1,530,000 bpd, an immediate increase of 300,000 bpd is realistic and, once spare parts arrive and repairs begin, a gradual increase will be noticeable after four to six months.

29. The forecast in production versus time is based on the utilization of spare parts estimated at \$210 million.

30. However, to ensure gradually increasing and sustainable crude oil production and the improvement of the oil industry of Iraq in general, with due regard to environmental and pollution issues, the group of experts estimates that the total expenditure required will be approximately \$1.2 billion to reach production levels of 3 million bpd.

31. Based on the above, it is difficult to predict accurately the proceeds of the export figures as stated in the table, since they will be heavily influenced

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by the world oil market. It seems very unlikely, however, that proceeds of \$5.256 billion during the 180-day period will be reached, since this would require an average oil price over the period of \$16.90 per barrel of exported Iraqi oil.

32. On the basis of the group of experts' estimate of total production less local consumption (after arrival of spare parts), sales during a period of 180 days, based on prices of \$12.50 and \$14.50 per barrel of exported Iraqi oil, are envisaged as follows:

	<u>\$12.50 per barrel</u>	<u>\$14.50 per barrel</u>
Sales after six months	\$3.9 billion	\$4.5 billion
Sales after nine months	\$5.0 billion	\$5.8 billion

33. The group of experts' assessment, taking into account the numerous technical variables involved and given the availability of the necessary spare parts and repairs indicated and amounting to an estimated \$210 million, is that the Government of Iraq's volume targets are optimistic, and that the time-frame for reaching its predicted figures, and therefore export targets, will slip. However, these production/time variations have significantly less effect on the dollar value of exports than the current price differentials in crude oil.

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