

Wm. S. Haas: Iran. Columbia U.  
Press, 1946. pp. 198-200

Most Persian vegetable and animal products could be considerably increased in quantity and improved in quality to the great benefit of a higher standard of living of the masses and to the advantage of Iran's export trade. There are several ways to achieve this highly desirable aim, in fact, one which must be the foremost preoccupation of the government. First, the land under cultivation should be improved and new land should be opened up. Irrigation is here the all-important factor compared with which fertilization is of but minor concern.

Lack of important rivers (only one, the Karun, is navigable) and scarcity of rainfall, except in the Caspian provinces, have made irrigation a necessity since the oldest times. The ingenious system of qanats, underground tunnels constructed to bring water over long distances to towns, villages and fields, is still in use. Iran produces enough foodstuffs to nourish her population. However, an increase of production by irrigation would be highly desirable for three reasons: first, to raise the standard of living; second, to enlarge the production of the industries based on agriculture; and third, to allow for increased exportation of agricultural and industrial products. The former shah gave much attention to the problem of irrigation. On the

other hand, it must be maintained that it would have been to the best interests of the country if part of the huge sums spent for other purposes had been diverted to agriculture and to irrigation.

As to irrigation methods strict attention should be paid to qanats, the subterranean channels. In many regions where there is no surface water the qanat system is the only means of irrigation. ~~The construction of qanats is the only means of irrigation.~~ The construction of qanats is a technique still generally practiced, familiar to the peasant, and a part of his traditional surroundings--therefore of moral and psychological importance. The qanats present the inestimable advantages that little water can be lost through evaporation and that water cannot be stolen. Wherever qanats exist, they should be repaired and improved, and new ones should be constructed. The digging of wells is made much easier by modern machinery, while the construction of the qanat itself may be left to native workmen.

Secondly, the use of pumps could be increased considerably. Fuel oil presents no problem in Iran. The road system, which even before the war, was steadily improving, is undergoing an unexpected development as a result of the war, and this has facilitated the distribution of oil.

Thirdly, many of the rivers, particularly those of the inner plateau, are oozing away into swamps or salt lakes, or are drying up. So the Zaindeh Rud, which irrigates the plain of Isfahan, ends in the Gaukhana Swamp; the Kur River, in the province of Farr, discharges its water into a salt lake, as do the Kara-su, near Qum, and many others. By harnessing some of these rivers much land could be won at comparatively little cost.

These regions seem to be of primary importance for new settlements as a result of irrigation: Khuzistan, the country between Ahwaz and Behbahan, and the plain of Gorgan in northeastern Persia. The difficulty which impedes the realization of a great irrigation scheme in Khuzistan is not technical but financial. To this must be added the objection which Lord Curzon raised in his time and which has hardly lost its importance. Lord Curzon feared that irrigation constructions might endanger or even render impossible the navigation of the Karun River. A similar argument might, perhaps, be raised, though with less emphasis, against the project of linking the Zaindeh Rud with the Karun, namely, that the loss of water suffered by the Karun might be detrimental lower in its course.

The plain of Behbahan and the whole plain between Ahwaz and Behbahan, which was once green land, would be ideal

for large settlements if properly irrigated. The plain of Gorgan could certainly nourish a larger population than it now does if the potential of the Atrak and the Gorgan rivers were fully utilized. As to the problem of transferring settlers from other regions to newly irrigated areas, it must be kept in mind that such transplantations have occurred frequently in the history of Persia. However, such transfers used to be confined to tribal populations--at least in peace time. Today the tribes have become sedentary, and it is doubtful if under normal conditions sufficient numbers of settlers could be obtained from them. Also, the problem of acclimatization could not be neglected; not every mountain tribe can stand the climate of Khuzistan. Iran is a sparsely populated country, and nowhere is there a surplus of inhabitants. Under these circumstances it will be found difficult to form settlements of considerable size. The only way of populating new cultivable area would seem to be to transplant inhabitants from impoverished and sterile regions and settle them under government guidance and control.

Wm. S. Haas: Iran. Columbia U.  
Press, 1946. pp. 198-200

Most Persian vegetable and animal products could be considerably increased in quantity and improved in quality to the great benefit of a higher standard of living of the masses and to the advantage of Iran's export trade. There are several ways to achieve this highly desirable aim, in fact, one which must be the foremost preoccupation of the government. First, the land under cultivation should be improved and new land should be opened up. Irrigation is here the all-important factor compared with which fertilization is of but minor concern.

Lack of important rivers (only one, the Karun, is navigable) and scarcity of rainfall, except in the Caspian provinces, have made irrigation a necessity since the oldest times. The ingenious system of qanats, underground tunnels constructed to bring water over long distances to towns, villages and fields, is still in use. Iran produces enough foodstuffs to nourish her population. However, an increase of production by irrigation would be highly desirable for three reasons: first, to raise the standard of living; second, to enlarge the production of the industries based on agriculture; and third, to allow for increased exportation of agricultural and industrial products. The former shah gave much attention to the problem of irrigation. On the

other hand, it must be maintained that it would have been to the best interests of the country if part of the huge sums spent for other purposes had been diverted to agriculture and to irrigation.

As to irrigation methods strict attention should be paid to qanats, the subterranean channels. In many regions where there is no surface water the qanat system is the only means of irrigation. The construction of qanats is the only means of irrigation. The construction of qanats is a technique still generally practiced, familiar to the peasant, and a part of his traditional surroundings--therefore of moral and psychological importance. The qanats present the inestimable advantages that little water can be lost through evaporation and that water cannot be stolen. Wherever qanats exist, they should be repaired and improved, and new ones should be constructed. The digging of wells is made much easier by modern machinery, while the construction of the qanat itself may be left to native workmen.

Secondly, the use of pumps could be increased considerably. Fuel oil presents no problem in Iran. The road system, which even before the war, was steadily improving, is undergoing an unexpected development as a result of the war, and this has facilitated the distribution of oil.

Thirdly, many of the rivers, particularly those of the inner plateau, are oozing away into swamps or salt lakes, or are drying up. So the Zaindeh Rud, which irrigates the plain of Isfahan, ends in the Gaukhana Swamp; the Kur River, in the province of Farr, discharges its water into a salt lake, as do the Kara-su, near Qum, and many others. By harnessing some of these rivers much land could be won at comparatively little cost.

These regions seem to be of primary importance for new settlements as a result of irrigation: Khuzistan, the country between Ahwaz and Behbahan, and the plain of Gorgan in northeastern Persia. The difficulty which impedes the realization of a great irrigation scheme in Khuzistan is not technical but financial. To this must be added the objection which Lord Curzon raised in his time and which has hardly lost its importance. Lord Curzon feared that irrigation constructions might endanger or even render impossible the navigation of the Karun River. A similar argument might, perhaps, be raised, though with less emphasis, against the project of linking the Zaindeh Rud with the Karun, namely, that the loss of water suffered by the Karun might be detrimental lower in its course.

The plain of Behbahan and the whole plain between Ahwaz and Behbahan, which was once green land, would be ideal

for large settlements if properly irrigated. The plain of Gorgan could certainly nourish a larger population than it now does if the potential of the Atrak and the Gorgan rivers were fully utilized. As to the problem of transferring settlers from other regions to newly irrigated areas, it must be kept in mind that such transplantations have occurred frequently in the history of Persia. However, such transfers used to be confined to tribal populations--at least in peace time. Today the tribes have become sedentary, and it is doubtful if under normal conditions sufficient numbers of settlers could be obtained from them. Also, the problem of acclimatization could not be neglected; not every mountain tribe can stand the climate of Khuzistan. Iran is a sparsely populated country, and nowhere is there a surplus of inhabitants. Under these circumstances it will be found difficult to form settlements of considerable size. The only way of populating new cultivable area would seem to be to transplant inhabitants from impoverished and sterile regions and settle them under government guidance and control.