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(Countably) infinite systems of difference equations are considered. Specifying their nonlinearity (if any) as sufficiently small (i.e., quasi-nonlinear), the conditions of existence and uniqueness of their N-periodic solutions are studied. The authors start from the homogeneous case with properties of solutions deduced from the related monodromy operator. In the next step, the necessary condition of solvability of the non-homogeneous problem $x_{n+1} = A(n)x_n + g_n$ is obtained in a suitable form. Finally, certain Lifschitzean nonlinearities are also shown compatible with the existence of N-periodic solutions. The approach is based on the known results for the finite-dimensional N-periodic problems. This idea and an ample use of limiting transitions from the truncated subsystems may be interpreted as the first step towards the (open) general problem of existence of periodic solutions of the quasi-linear difference equations in the abstract Banach spaces.