This book constitutes the proceedings of the 20th international conference on logic for programming artificial intelligence and reasoning (LPAR) held in Suva Fiji in November 2015. The conference received 43 regular papers and one invited talk, which were carefully selected from 92 submissions. The topics covered include automated reasoning, computational logic programming, and their applications. The proceedings include lecture notes in computer science, logic for programming artificial intelligence and reasoning - the international conference on logic for programming artificial intelligence and reasoning.